TRANSPORTATION MASTER PLAN FINAL REPORT

MIAMIBEACH

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SUBMITTED AS SEPARATE DOCUMENT

INTRODUCTION

2. INTRODUCTION

The City of Miami Beach is a 7.7 square mile barrier island formed by a compilation of 27 different land masses. The South Beach area, along with the entire eastern coast of the City, has the largest contiguous land area forming about 45 percent of the total land mass. This area is connected to the adjacent land masses by a series of 12 man-made bridges, soon to be 13 with the upcoming West Avenue Bridge, and to the mainland by 4 causeways. Just as its distinctive historic culture and architecture, the City has a topography that is quite unique. WHAT MAKES IT DIFFERENT, MAKES IT BEAUTIFUL, but also presents challenges when providing continuous connectivity for its transportation network and the different modes it encompasses.

The way in which we maneuver through our city has lasting impacts on various factors. While it can be thought that the sole purpose of transportation is to arrive from a starting point to an end destination, what can be easily overlooked is the ease in which we travel and the particular mode of transportation that is available. These factors play into the evolution and success of a city financially, socially, and environmentally. In order to keep the City of Miami Beach at the forefront of transportation development, we have to assess its needs as the population continues to expand. With this expansion, comes a requirement to REEVALUATE THE EXISTING TRANSPORTATION NEEDS OF THE COMMUNITY and the multi-modal system that is currently in place and to propose solutions to improve transportation. This has driven the City to arrive at a multi-modal approach to proactively plan for its current and future growth.

This Transportation Master Plan (TMP) is intended to provide future directions for the City of Miami Beach's transportation system. It will be integrated into the City of Miami Beach 2025 Comprehensive Plan, other CMB plans, and any other plans that will affect the City's Transportation Network. In recognition of the exponential growth in population, future traffic and transit conditions will be forecasted into the year 2035. In an effort to provide guide for future transportation strategies, this plan will generate a project bank for the City of Miami Beach, composed of multi-modal projects, and will analyze new prospects for funding the future endeavors and potential policy. To ACCOMPLISH A DIVERSE GROUP OF PROJECTS FOR THE CITY, a range of city-wide data was collected and coordination with concurrent planning efforts was maintained to ensure a wide coverage of the City's transportation network.

The City should be thought of in a holistic manner as there are many factors that play crucial roles in transportation. The environment, employment rate, regional connections, traffic generators, freight movement and multi-modal transportation all influence the City's transportation network. Therefore, to PROVIDE A COMPREHENSIVE AND FUNCTIONAL TMP, the data presented herein regards all of these aspects to fully assess possible transportation improvements.

This TMP ultimately seeks to provide recommendations for feasible multi-modal projects that seek to enhance the City's mobility and connectivity while providing project guidance to make this a reality.

TMP GOALS

The TMP effort is guided by goals set forth to achieve an overall multi-modal vision for the City's transportation network. Thus, the TMP reflects other City planning efforts such as area plans, corridor studies, or other Commission decisions that modify and enhance the mobility and connectivity of the residents as well as its visitors.

The plan establishes the following goals and/or strategies to develop recommendations and suggest improvements that benefit all road users:

Goal 1: Prioritize the people, the pedestrians.

Encourage City residents and visitors, through safe and engaging infrastructure, to resort to walking for their short trips within their respective living and staying areas.

Goal 2: Provide reliable, convenient, and consistent transit service and infrastructure.

Through City efforts and regional coordination, develop a city-wide transit network in which public transportation will have exclusively assigned road space, enhanced vehicles, and state-of-the-art transit amenities.

Goal 3: Develop a safe, connected, and consistent bicycle network throughout the entire City.

Promote bicycling, through well designed facilities, education, and encouragement, as a safe and healthy mode to get around the City, not only for leisure trips but also as a dependable mode of reaching daily destinations. The City has placed priority on bicyclists and has developed a specifically focused Bicycle Pedestrian Master Plan (BPMP) along with a Street Design Guide.

Goal 4: Provide accessible and convenient off-street parking facilities.

Strengthen the efforts to seek public-private partnerships for off-street parking facilities that support and encourage multi-modal activity.

Goal 5: Ensure most, if not all, planned developments within all areas of the City are in concurrence with the expected capacity levels and the multi-modal vision for the transportation network.

Develop a way to measure and mitigate the impacts, to the City's roadway network, of any proposed new development regardless of its nature and size.

Goal 6: Plan for efficient freight mobility and delivery of goods within the City.

Develop recommendations for improvements to the way in which goods are delivered through the City and on which roadways and times this may take place.

To move forward with developing a functional plan to achieve these goals, a few steps were taken in the multi-modal direction in hopes of shifting the paradigm. The following process was followed in efforts to reach the ultimate goal of this TMP: develop and recommend feasible short and long-term projects.

THE TMP PROCESS

1. Gather all available existing relevant data

2. Assess existing transportation mode splits and develop attainable future share goals

3. Forecast future conditions of the transportation network

4. Establish and endorse modal prioritization hierarchy

5. Define and assign mode specific corridors based on physical characteristics and modal data

6. Evaluate and prioritize potential solutions for the different modes: pedestrians, public transit, bicyclists, freight, and personal automobiles

7. Develop a comprehensive multi-modal project bank

8. Suggest a policy conducive to target the mode share vision and provide consistency with the established and adopted modal prioritization hierarchy

EXISTING CONDITIONS

3. EXISTING CONDITIONS

This TMP encompasses the entire City of Miami Beach, and thus all data presented herein is pertinent to its boundaries and connecting regional corridors. The City is divided into three (3) areas South, Middle, and North Beach with southernmost limit being South Pointe and the northernmost 87th Terrace at which point the Town of Surfside begins.

While the entire range of data collected, mapped, and/or summarized for the City limits can be found within the separate TMP's Existing Conditions Technical Memorandum, this section briefly summarizes the most relevant facts of the City and its transportation network.

STUDY AREA

TOTAL CITY AREA: 18.7 SQ. MILES

TOTAL LAND AREA: 7.7 SQ. MILES

TOTAL WATER AREA: 11.0 SQ. MILES

27 ISLANDS

13 NEIGHBORHOODS

3 AREAS

NORTH BEACH

MIDDLE BEACH

SOUTH BEACH

Data Sources: City of Miami Beach

DEMOGRAPHICS

TOTAL RESIDENT POPULATION: 90,588 (AS OF 2014)

DENSEST CITY AREAS: 300 TO 550 PEOPLE PER SQ. MILE

AVERAGE DAILY POPULATION: 205,915

53% MALE

47% FEMALE

93% RESIDENTIAL LABOR FORCE EMPLOYED

21% RESIDENTS WORK IN CITY

$43,316 MEDIAN HOUSEHOLD INCOME

52,621 JOBS WITHIN CITY

39.3 MEDIAN AGE

BETWEEN THE AGES OF 15-25 — 3.8%

65 YEARS AND OVER — 2.9%

ZERO-CAR HOUSEHOLDS — 16.9%

Data Sources: US Census Bureau – 2012 American Community Survey – Three Year Estimate, Miami Dade County, City of Miami Beach 2014 Environmental Scan

AREAS WITH HIGHEST POPULATION DENSITY PER SQUARE MILE

AREAS WITH HIGHEST DENSITY OF RESIDENTIAL EMPLOYMENT

AREAS WITH HIGHEST DENSITY OF YOUTH POPULATION (15-25) PER SQUARE MILE

AREAS WITH HIGHEST DENSITY OF ELDERLY POPULATION (65 AND UP) PER SQUARE MILE

AREAS WITH HIGHEST DENSITY OF ZERO-CAR HOUSEHOLDS

Figure 1: City of Miami Beach Demographics Overview Maps

ENVIRONMENTAL

CITY-WIDE LAND USES

(PERCENTAGES BASED ON THE CITY'S 7.7 SQUARE MILES OF LAND AREA)

30%	17%	3%	3.5%	20.5%	26%
SINGLE FAMILY	MULTI FAMILY	HOTELS	COMMERCIAL	PARKS, GOLF COURSES, BEACH, & OTHER RECREATIONAL FACILITIES	OTHER (ROADS, GOVERNMENT FACILITIES, SCHOOLS, RELIGIOUS, INDUSTRIAL, ETC.)

325 UPCOMING DEVELOPMENTS AS OF 2015

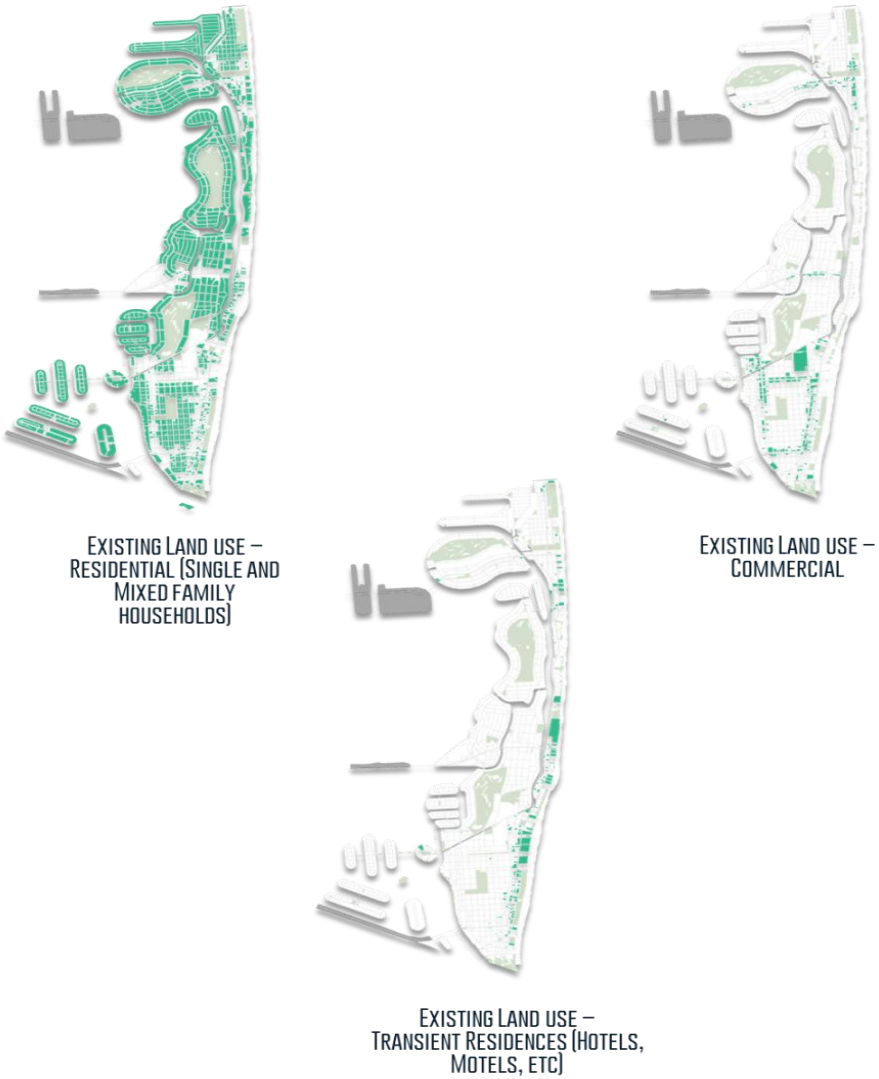


Figure 2: City of Miami Beach Environmental Overview Maps

BICYCLISTS AND PEDESTRIANS

29.5 MILES
OF BICYCLE NETWORK

- 7.0 MILES OF BICYCLE ROUTES
- 17.0 MILES OF BICYCLE LANES
- 4.8 MILES OF SHARED PATHS

11%
RESIDENTS BIKING AND WALKING AS PRIMARY MODE OF TRANSPORTATION
(CITY-WIDE COMMUNITY SURVEY)

3.5%
PEOPLE RIDING BIKES TO WORK
(AMERICAN COMMUNITY SURVEY)

9.9%
PEOPLE WALKING TO WORK
(AMERICAN COMMUNITY SURVEY)

5 PEDESTRIAN BRIDGES

Data Sources: US Census Bureau – American Community Survey , City of Miami Beach

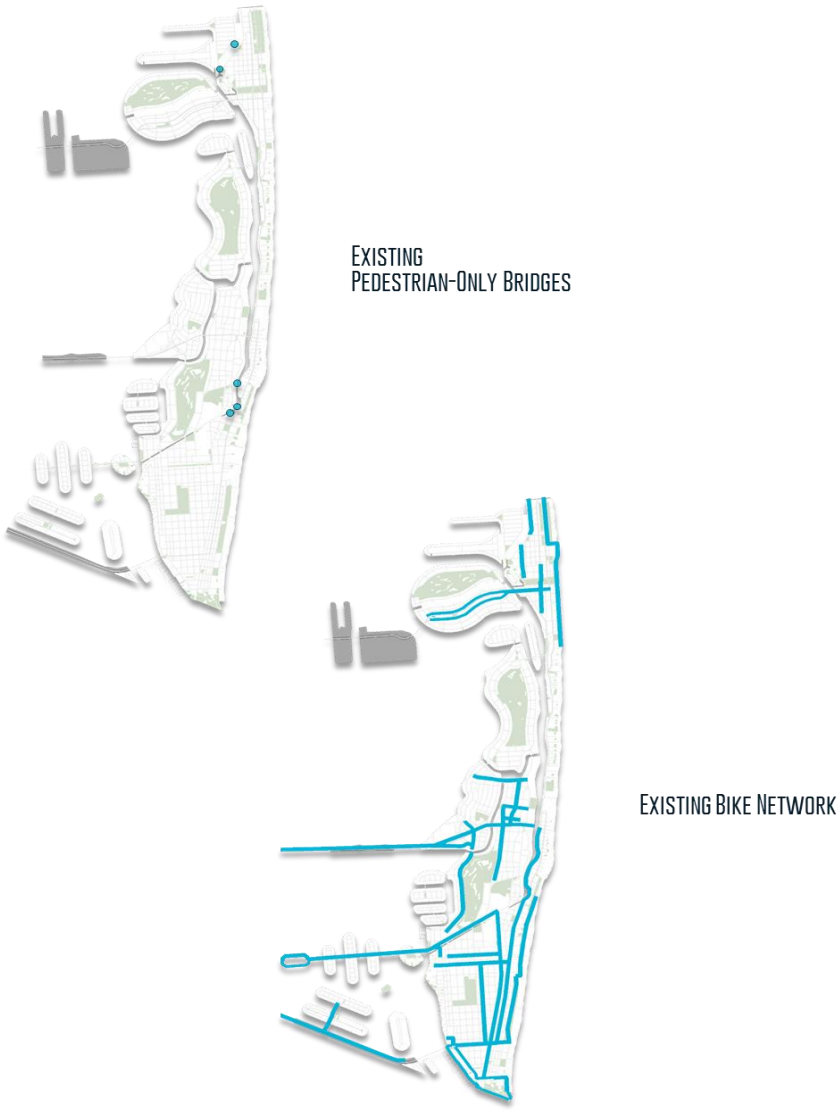


Figure 3: City of Miami Beach Bike/Ped Overview Maps

Existing Bicycle Facilities

CYCLING is the most energy efficient mode of transportation; and for many people, cycling is a healthy, fun, and inexpensive way to travel. It creates no emissions, costs little, and CAN BE A GREAT WAY TO EXPERIENCE THE CITY'S STREETS AND ITS HISTORICALLY RICH NEIGHBORHOODS while exercising and safely REACHING EVERYDAY DESTINATIONS. Many of the daily trips made within the City are of a length that may be reasonably accomplished by bicycle.

Over the past few years, the City of Miami Beach has been making an effort to provide BICYCLE FACILITATES throughout its different areas, South, Middle, and North. Although, all three (3) areas currently have roadways which bike enthusiast can use to get around within each, there is a CLEAR LACK OF CONNECTIVITY between them. The South Beach and North Beach area of the City have various facilities, ranging from Shared Use Paths to mixed traffic travel lanes marked with Shared Lane Markings (Sharrows), which provide good north-south coverage of the area but not much east-west connections. Within Middle Beach, the bicycle infrastructure is sparse, with most of its northern section not having any facilities. This causes the biggest disconnect for navigating the City entirely on a bicycle. Individuals wishing to make bike trips from South Pointe to the North Beach area will have to ride, during parts of their trips, on unmarked mixed traffic lanes and/or sidewalks.

This TMP was conducted concurrently with a specific BICYCLE AND PEDESTRIAN MASTER PLAN (BPMP) for the City. This BPMP had a more specific focus, and hence was able to capture the most current City issues regarding the bicycle mode of transportation through an extensive outreach program. This broad involvement of the City residents and visitors aided the BPMP to recommend strategies and potential improvements. The BPMP serves as a GREAT TOOL FOR FUTURE GUIDANCE TOWARD THE IMPLEMENTATION OF A TRUE CITYWIDE MULTI-MODAL NETWORK. While this section of the TMP will focus on bicyclists, it should be utilized in conjunction with the more specifically focused BPMP. The vast majority of the bicycle mode improvements recommended by this TMP are in accordance with the City's BPMP.

Figure 4 displays the location of all the bicycle facilities currently provided within the City of Miami Beach.

Figure 4: Existing Bicycle Facilities within the City of Miami Beach

Existing Pedestrian Facilities

Pedestrian Safety

Pedestrian safety is the PRIMARY CONCERN of the four main objectives to achieve an excellent pedestrian transportation system. Between the years 2011 and 2013, a total of 8,425 citywide crashes occurred, of which 310 (4 %) involved pedestrians. The location of 11 of these pedestrian crashes was reported unknown. Of the total located (299) pedestrian crashes within the three year period, most occurred in South Beach (195 or 65%), followed by North Beach (56 or 19%), and Middle Beach (48 or 16%).

Also, of the total 310 pedestrian crashes, six (6) resulted in fatalities, with four (4) occurring in the southern region of the City and two (2) occurring in the northern region. The area of South Beach is the most popular destination and the largest contiguous landmass of the City; therefore it is not surprising that most pedestrian crashes occur in this area. Nevertheless, EVEN A SINGLE PEDESTRIAN CRASH IS UNDESIRABLE.

Critical Pedestrian Zones

In order to determine critical zones within the City where pedestrians need to be prioritized existing conditions need to be review and sufficient pertinent data needs to be collected and available. Throughout the City, nine pedestrian counts where preformed at critical locations where the amount of pedestrian volume have been perceived to be the highest. The 15-min pedestrian counts were collected on Saturday, November 15, 2014 from 10:00 AM to 2:00 PM and from 8:00 PM to 12:00 AM at the following locations:

- Beach walk between the Deauville Beach Resort (approximately at 67th Street) and 69th Street
- Beach walk near the Indian Beach Park (i.e. north of the Fontainebleau Hotel)
- Ocean Drive south of 3rd Street (in the vicinity of Marjory Stoneman Douglas Ocean Beach Park)
- Intersection of 5th Street and Ocean Drive
- SR A1A Collins Avenue in the vicinity of the Fontainebleau Hotel
- SR A1A Collins Avenue north of 21st Street
- SR A1A Indian Creek at 24th Street and the Pedestrian Bridge
- SR A1A Indian Creek at 28th Street and the Pedestrian Bridge
- Washington Avenue in the vicinity of 7th Street

The pedestrian counts revealed that the location with the highest pedestrian volume within an eight hour period is the intersection of Ocean Drive and SR A1A/5th Street with a total of 6,140 pedestrian counts, followed by, in order of highest to lowest pedestrian volumes, the intersection of Washington Avenue and 7th Street with 3,637, SR A1A Collins Avenue and 24th Street with 2,842, Ocean Drive and 3rd Street with 2,197, SR A1A/Collins Avenue and 21st Street with 1,696, beach walk near the Deauville Beach Resort with 1,387,SR A1A Indian Creek Drive and 28th Street with 902, beach walk near the Fontainebleau Hotel with 883, and lastly SR A1A Collins Avenue near the Fontainebleau Hotel with 193.

TRANSIT

ROUTE 119 (S)

HIGHEST DAILY ACTIVITY (BOARDINGS AND ALIGHTINGS)

17,046

3 STOPS IN THE AREA OF LINCOLN ROAD AND WASHINGTON AVENUE, DAILY BOARDINGS RANGE UP TO 950 EACH

11%

RESIDENTS USING TRANSIT AS PRIMARY MODE OF TRANSPORTATION (CITY-WIDE COMMUNITY SURVEY)

13.3%

PEOPLE RIDING CITY TRANSIT TO WORK (AMERICAN COMMUNITY SURVEY)

AVERAGE TRANSIT SPEEDS ARE AS LOW AS

5 MPH

362 STOPS

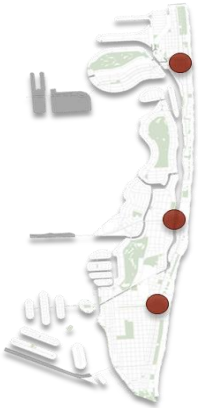
13 REGIONAL ROUTES

3 LOCAL ROUTES

Data Sources: Miami Dade County, City of Miami Beach

AREAS WITH THE SLOWEST AVERAGE TRANSIT SPEEDS

ROUTES WITH HIGHEST ACTIVITY:
- 103 (C)
- 120
- 112 (L)
- 119 (S)



AREAS WITH HIGHEST TRANSIT ACTIVITY (BOARDINGS AND ALIGHTINGS)

EXISTING LOCAL TRANSIT ROUTES:
- NORTH BEACH TROLLEY LOOP
- SOUTH BEACH CIRCULATOR
- ALTON-WEST AVENUE TROLLEY LOOP

Figure 5: City of Miami Beach Transit Overview Maps

Existing Transit Network

Currently, MDT provides, maintains, and operates 13 REGIONAL BUS ROUTES that serve the City across the four (4) causeways from the mainland, and one (1) local circulator. Additionally, The City of Miami Beach is in the process of implementing a network of city-wide transit circulators as a compliment to the regional service provided by MDT. The first phase circulator to be implemented by the City was the North Beach Trolley Loop which began service in 2014. As a second phase, the City recently decided to make the originally temporary Alton-West Trolley Loop into a permanent circulator route, referred to as the South Beach Trolley, along with the Middle Beach Trolley Loop. The Collins Link Trolley service will be the third phase. When combined, ALL FOUR TROLLEY ROUTES PROVIDE AN INTERCONNECTED LOCAL CIRCULATOR NETWORK for every-day, all-day transit travel within Miami Beach. ***Figure 6*** displays the existing transit service within the City.

Figure 6: Existing MDT Routes with the City

Transit Ridership

The ridership data for the existing regional routes were obtained directly from the MDT archives for the year 2014. These data were filtered to extract individual RIDERSHIP ONLY FOR THE STOPS LOCATED WITHIN THE CITY PER INDIVIDUAL ROUTE. These ridership values were then forecasted using historical growth factors and well as growth obtained from the SERPM 7.0 model.

SERPM 7.0 is an activity-based model (ABM) that simulates both household-level and person-level travel choices including intra-household interactions between household members. Each transit route within the model consists of a series of links that make up the alignment of the route, the mode, operator, headways, and speed. Transit ridership is then calculated by assigning the transit trips to the transit network based on the best transit paths. SERPM 7.0 model reports ridership numbers by route, by mode, and by stop for five time periods of the day: AM-Peak, Midday, PM-Peak, Early AM, and Evening. The base-year of SERPM 7.0 is 2010, and it also includes a 2040 future year model based on the adopted 2040 Long-Range Transportation Plans (LRTP) from the Miami-Dade, Broward, and Palm Beach Counties Metropolitan Planning Organization (MPOs).

The growth factors from the SERPM 7.0 model ranged between 0.4% and 2.0% for the 13 regional routes. Since the model involves many different variables, its output may sometimes yield data that will not necessarily relate to the particular historical growth of a specific route. Therefore, the values from the model output were compared to historical data and adjustments were made where deemed appropriate. The following table displays the existing RIDERSHIP WITHIN THE CITY FOR EACH INDIVIDUAL REGIONAL ROUTE and the FORECASTED VALUES FOR THE YEARS 2025 AND 2040 based on the obtained growth factors. Though this Transportation Master Plans looks into the year 2035 for the implementation of its vision, ridership estimates were forecasted for the year 2040 to be consistent with the latest adopted Miami-Dade LRTP.

Table 1: Existing and Forecasted City Regional Routes Ridership

ROUTE	2014			2025			2040		
	DAILY BOARDINGS								
	WKDY.	SAT.	SUN.	WKDY.	SAT.	SUN.	WKDY.	SAT.	SUN.
62	70			87			117		
79	160			178			207		
101	350	153	189	390	171	211	453	198	245
103	2225	1667	1196	2403	1800	1292	2668	1998	1434
108	440	365	339	505	418	388	608	504	468
110	865	429	365	954	473	402	1089	540	460
112	3919	3195	2660	4493	3663	3049	5413	4413	3674
113	658	302	346	734	337	386	852	391	448
115	414	37		435	39		466	42	
117	381	132		425	147		493	171	
119	7286	5296	5062	8308	6039	5772	9936	7222	6903
120	3690	3111	1714	4117	3470	1912	4779	4029	2220
150	1212	1009	1041	1507	1255	1294	2028	1689	1742
All Routes Total	**21670**	**15695**	**12912**	**24535**	**17811**	**14707**	**29110**	**21197**	**17593**

Figure 7 shows the existing combined boardings for all routes for each stop with the City and ***Figure 8*** shows the combined average speed of all of the regional routes. This places transit ridership and speed in a heat map visual context and serves as an aid to recognize the areas within the City with the highest transit activity.

Figure 7: Existing MDT Routes Combined Ridership per Stop

Figure 8: Existing MDT Routes Combined Average Speed

Ongoing Future Transit

Figure 9: Sample Light-Rail Transit Vehicle

Over the last few years the City has embarked in efforts to plan unprecedented improvements to the existing transit system. With five major projects included in the Miami-Dade MPO 2040 Long Range Transportation Plan and with an additional set of two intercity trolley initiatives, Miami Beach has set multimodal transportation as its cynosure since PUBLIC TRANSPORTATION has proven to enhance personal opportunities, reduce traffic congestion, reduce fuel consumption, reduce fuel emissions, and INCREASE THE PERSON CAPACITY OF ROADWAYS. The City faces numerous challenges in achieving its transportation and sustainability goals, however, these planned efforts and initiatives are effective steps in achieving a quality transportation system that supports growth and blossoms a vibrant community.

In detail, the UPCOMING TRANSIT PROJECTS WITHIN THE CITY includes:

1. 79th Street Causeway/John F. Kennedy Causeway Enhanced Bus Service from the Northside Metrorail Station to the Beach Convention Center

2. Premium Light-Rail Beach Connection (previously known as Baylink) from Miami Downtown Terminal to the Beach Convention Center

3. Central I-95 Expressed Enhanced Bus Service from the Beach Convention Center to the Miami Intermodal Center (MIC)

4. North I-95 Expressed Enhanced Bus Service from the Beach Convention Center to the Golden Glades Interchange (GGI) Terminal

5. Miami Beach Light-Rail Transit (LRT) Collins Extension from the Beach Convention Center to 71st Street/Normandy Drive

6. Mid-Beach Trolley Connection from the Mount Sinai Clinical Center to US Social Security Administration on the intersection of Dade Boulevard and Alton Road

7. Collins Link Trolley Circulator from 69th Street to 39th Street

Figure 10 displays where these upcoming transit projects will be located within the City. These projects are intended to support the existing transit users within the City as well as to swift the mode-split from single-occupancy vehicles to public/mass transportation vehicles by providing a variety of destinations and opportunities to travel in, out, and within the City.

Figure 10: Future Planned Transit Projects within the City

Since Miami Beach has a unique geography composed of multiple islands, opportunities for alternative transit mediums are available such as water taxis. Currently a private company provides this service from Bayside Market Place/Bayfront Park to the Miami Beach Marina with six daily trips and 90 minute headways. The City of Miami Beach BLUEWAYS MASTER PLAN (BMP) has identified 4 potential stops throughout the Beach where docks and other amenities would create shared use spaces and routes for marine transit to and from mainland Miami. The POTENTIAL WATER TAXI STOPS include:

1. SoBe Street End Pocket
2. Monument Island
3. Maurice Gibb Park

Figure 11: Blueways Master Plan Conceptual Rendering of Miami Beach Water Taxi dock

As per the City's BMP, water taxis could be used as income generating tourist attractions, replace causeway trips for marine trips, and enhance the aesthetic appeal of the City. The following figures display some of the potential site specific improvements recommend by the City's BMP.

Figure 12: Blueways Master Plan's SoBe Street End Pocket Park Concept Plan

Figure 14: Blueways Master Plan's Maurice Gibb Park Concept Plan

Figure 13: Blueways Master Plan's Monument Island Concept Plan

AUTOMOBILES

22.6 MILES OF ARTERIAL ROADWAYS

2 NORTH-SOUTH ARTERIALS

4 EAST-WEST ARTERIALS

SR A1A
COLLINS AVENUE

ONLY ROAD DIRECTLY CONNECTING THE NORTH AND SOUTH ENDS OF THE CITY

105,000

DAILY TRAFFIC VOLUMES RANGE UP TO

ON MACARTHUR CAUSEWAY AND JULIA TUTTLE CAUSEWAY

8 MAJOR ROADS LEVEL OF SERVICE **E** OR WORSE

8,425
CITY-WIDE CRASHES FROM 2011-2013

310

166

Data Sources: Florida Department of Transportation, Miami Dade County, City of Miami Beach

MAJOR ROADWAYS (ARTERIALS)

ROADWAY SEGMENTS WITH HIGHEST DAILY TRAFFIC VOLUMES

ROADWAY SEGMENTS WITH DAILY LEVEL OF SERVICE (LOS) E OR WORSE

AREAS WITH HIGHEST DENSITY OF CRASHES

AREAS WITH HIGHEST DENSITY OF CRASHES INVOLVING A BICYCLIST OR A PEDESTRIAN

AREAS WITH HIGHEST DENSITY OF FATAL CRASHES

Figure 15: City of Miami Beach Automobile Overview Maps

Existing Roadway Network

Motorized personal automobiles are the main mode of transportation into and within the City of Miami Beach. The City is composed of arterials, collectors, and local streets. It has two (2) major North-South arterial roadways, one of which is Collins Avenue providing connectivity throughout the City's entirety and the other is Alton Road which provides access to the majority of the City. Other major arterials include four (4) East-West roadways within the City and are a continuity of the four (4) causeways that connect the City to the mainland. These roadways are SR A1A/5th Street, Dade Boulevard, SR 112/Arthur Godfrey Road/W 41st Street, and SR 934/ 71st Street. The rest of the major roadways within the Miami Beach are collectors. Most of them form a grid in the South Beach area, with Washington Avenue providing the most North-South connectivity and thus exhibiting large commercial activity around it.

Roadway Functional Classification

FUNCTIONAL CLASSIFICATION ESTABLISHES THE HIERARCHY OF THE ROADS as well as the authorities responsible for them: state, county, or local. The state roads are aligned near the East and West edges of the City limits, primarily traveling North and South, as well as making connections to the MacArthur Causeway (I-395), Julia Tuttle Causeway (I-195), and John F. Kennedy Causeway. Within the interior of this State road loop, reside the majority of the local roads.

ARTERIALS are major streets expected to carry large volumes of traffic. Arterials are often divided into major and minor arterials, and provide regional as well as local connections. All state roadways mentioned above are classified as arterial.

COLLECTORS, as the name implies, collect traffic from local roads and distribute it to arterials. Traffic on collectors is usually going to or coming from somewhere nearby. Collectors are typically in jurisdiction of the county or the local government, in this case, the CMB.

LOCAL ROADS are at the "bottom" of the hierarchy. These roads have the lowest posted speed limits, and carry low volumes of traffic. Typically they will be the primary roads within residential neighborhoods for circulation.

Level of Service (LOS)

Proving AMPLE CAPACITY FOR ITS USERS is perhaps the first priority and FUNCTIONALITY OF A ROADWAY. The Florida Department of Transportation (FDOT), in its Quality/Level of Service Handbook, defines the capacity of a road as the maximum number of vehicles or people that can safely pass through a point or section of it within a specified period of time. CAPACITY DEPENDS ON VARIOUS FACTORS of a roadway, such as the numbers of lanes for the different traffic movements that take place on it, as well as the timing at its signalized intersections. Through providing sufficient capacity, a road essentially is providing a service to those who traverse on it. The quantitative stratification of the quality of this service is referred to as Level of Service (LOS) and is categorized with the letters A through F, with A being the optimal traveling condition on a roadway and F being the worst.

LEVEL OF SERVICE LETTER GRADING is fundamentally defined in the following manner:

LOS A: Free flow. Vehicles travelling on the roadway are practically unaffected by other vehicles and have complete mobility between lanes. Traffic flows at or above posted speed limits.

LOS B: Nearly free flow. Traffic still flows at or above posted speed limits but maneuverability for vehicles is slightly more restricted.

LOS C: Stable flow. Ability to maneuver through lanes is noticeably restricted and posted speeds are maintained.

LOS D: Approaching unstable flow. Speeds slightly decrease as traffic volumes slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease.

LOS E: Unstable flow (operating at capacity). The spacing between vehicles traveling at a uniform flow is at a minimum. Speeds can vary rapidly because of disruptions in the traffic stream and are maintained below posted limits.

LOS F: Forced or breakdown flow. The travel demand exceeds the capacity of the roadway as it is constantly in a traffic gridlock. Frequent slowing and/or stopping takes place.

The Highway Capacity Manual (HCM) establishes a structure for roadway systems consisting of points, links, segments, sections, facilities, corridor, areas, and system. While LOS is measured for all of these elements, this Transportation Master Plan effort will only focus on the links level of service. Based on HCM methodology and statewide observations of traffic and roadway design characteristics, the FDOT establishes daily and peak hour generalized roadway service volumes for various types of roadways. The HCM methodology relies on the notion that roadway capacity which is a function of intersection delay; increasing frequency of signals, with an associated longer period of stop time per intersection, tends to increase travel time and thus reduce average travel speed and overall LOS. LOS link analysis for Annual Average Daily Traffic (AADT) and peak volume values was performed using the FDOT 2012 Generalized LOS Tables. Since the determination of a roadway's LOS is dependent upon a number of characteristics, the following information was collected for the different road segments within the City.

- Specific Link (Roadway Segment)
- Number of Lanes
- Existence of a Median
- Road Jurisdiction
- Functional Classification
- Number of Traffic Signals
- Segment Length
- Signals per Mile
- Speed Limit
- Existing Level of Service Standard
- Service Volume at LOS C, D, E
- Average Annual Daily Traffic
- Peak Hour Volume
- Existing Level of Service
- Remaining Capacity

Table 2 defines the segments (links) for which the roadway characteristics data were collected and for which traffic volumes were forecasted.

Table 2: Specific Links (Roadway Segments) [Pages 10 – 15]

Segment Number	Segment Name		Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
			From	To								
1	SR A1A / MacArthur Causeway		City Limits	Alton Road	3.102	Divided	Barrier Wall	State	Arterial	4	1	55
2	SR A1A / 5th Street		Alton Road	Collins Avenue	0.553	Divided	Curbed	State	Arterial	8	14	35
3	SR A1A / Collins Avenue		5th Street	15th Street	0.912	Undivided	N/A	State	Arterial	10	11	35
4	SR A1A / Collins Avenue		15th Street	26th Street	1.101	Undivided	N/A	State	Arterial	11	10	35
5	SR A1A	Collins Avenue	26th Street	41st Street	1.024	Undivided	N/A	State	Arterial	10	10	35
6		Indian Creek Drive	26th Street	41st Street	0.807	Undivided	N/A	State	Arterial	4	5	35
7	SR A1A / Indian Creek Drive		41st Street	44th Street	0.201	Divided	Curbed	State	Arterial	1	5	35
8	SR A1A / Collins Avenue		41st Street	44th Street	0.204	Divided	Curbed	State	Arterial	3	15	35
9	SR A1A / Collins Avenue		44th Street	5800 Block	1.802	Divided	Curbed	State	Arterial	17	9	35
10	SR A1A	Collins Avenue	5800 Block	63rd Street	0.226	Undivided	N/A	State	Arterial	1	4	35
11		Indian Creek Avenue	5800 Block	63rd Street	0.211	Undivided	N/A	State	Arterial	1	5	35
12	SR A1A / Collins Avenue		63rd Street	71st street	0.501	Undivided	N/A	State	Arterial	3	6	35
13	SR A1A / Indian Creek Drive		63rd Street	Abbott Avenue	0.511	Divided	Curbed	State	Arterial	3	6	35
14	Indian Creek Drive		Abbott Avenue	Byron Avenue	0.122	Divided	Curbed	City of Miami Beach	Arterial	2	16	35
15	Indian Creek Drive		Byron Avenue	71st street	0.204	Undivided	N/A	City of Miami Beach	Arterial	2	10	35
16	SR A1A	Collins Avenue	71st Street	73rd Street	0.464	Undivided	N/A	State	Arterial	3	6	35
17		Abbott Avenue	Indian Creek Drive	73rd Street	0.463	Undivided	N/A	State	Arterial	3	6	35
18	SR A1A	Collins Avenue	73rd Street	88th Street	0.975	Undivided	N/A	State	Arterial	8	8	35

Segment Number	Segment Name	Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
		From	To								
19	Harding Avenue	73rd Street	88th Street	0.981	Undivided	N/A	State	Arterial	8	8	35
20	SR 112 / Julia Tuttle Causeway	City Limits	Alton Road	3.136	Divided	Curbed/ Guardrail	State	Arterial	0	0	
21	SR 112 / 41st Street	Alton Road	Collins Avenue	0.815	Undivided	N/A	State	Arterial	15	18	35

Segment Number	Segment Name		Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
			From	To								
22	SR 934 / 79th Street Causeway		City Limits	Bay Drive	2.677	Divided	Curbed	State	Arterial	12	4	45
23	SR 934	71st Street	W Bay Drive	E Bay Drive	1.049	Undivided	N/A	State	Arterial	5	5	35
24		Normandy Drive	W Bay Drive	E Bay Drive	1.041	Undivided	N/A	State	Arterial	5	5	35
25	SR 934 / 71st Street		E Bay Drive	Dickens Avenue	0.221	Undivided	N/A	State	Arterial	3	14	35
26	SR 934 / 71st Street		Dickens Avenue	Collins Avenue	0.304	Undivided	N/A	State	Arterial	5	16	35
27	SR 907 / Alton Road		5th Street	Dade Boulevard	1.332	Divided	Curbed	State	Arterial	13	10	35
28	SR 907 / Alton Road		Dade Boulevard	41st Street	1.521	Divided	Curbed	State	Arterial	5	3	35
29	SR 907 / Alton Road		41st Street	63rd Street	2.504	Divided	Curbed	State	Arterial	3	1	35
30	SR 907 / 63rd Street		Alton Road	Collins Avenue	0.426	Divided	Striped	State	Arterial	4	9	35
31	Alton Road		South Pointe Drive	5th Street	0.465	Divided	Curbed	City of Miami Beach	Collector	3	6	25
32	11th Street		Alton Road	Washington Avenue	0.735	Undivided	N/A	City of Miami Beach	Collector	8	11	25
33	Venetian Causeway		City Limits	Dade Boulevard	2.555	Undivided	N/A	County	Arterial	7	3	35
34	Dade Boulevard		Venetian Causeway	Alton Road	0.303	Undivided	N/A	County	Arterial	3	10	35
35	Dade Boulevard		Alton Road	Pine Tree Drive	0.847	Undivided	N/A	County	Arterial	6	7	35
36	17th Street		Dade Boulevard	Collins Avenue	0.861	Undivided	N/A	City of Miami Beach	Collector	10	12	25

Segment Number	Segment Name	Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
		From	To								
37	Meridian Avenue	5th Street	Dade Boulevard	1.503	Undivided	N/A	City of Miami Beach	Collector	10	7	25
38	Meridian Avenue	Dade Boulevard	28th Street	0.604	Undivided	N/A	City of Miami Beach	Collector	1	2	26
39	28th Street	Meridian Avenue	Pine Tree Drive	0.391	Undivided	N/A	City of Miami Beach	Collector	0	0	25
40	Washington Avenue	South Pointe Drive	Dade Boulevard	2.094	Divided	Curbed	City of Miami Beach	Collector	23	11	25
41	South Pointe Drive	Alton Road	Ocean Drive	0.23	Divided	Curbed	City of Miami Beach	Collector	0	0	25
42	West Avenue	5th Street	17th Street	1.382	Undivided	N/A	City of Miami Beach	Collector	9	7	25
43	North Bay Road	West Avenue	La Gorce Drive	3.465	Undivided	N/A	City of Miami Beach	Local	1	1	25
44	Prairie Avenue	Dade Boulevard	47th Street	1.755	Undivided	N/A	City of Miami Beach	Collector	5	3	25
45	Pine Tree Drive	Dade Boulevard	47th Street	1.611	Divided	Curbed	County	Collector	8	5	35
46	Pine Tree Drive	47th Street	51st Street	0.401	Divided	Curbed	County	Collector	2	5	35
47	Pine Tree / La Gorce – Pine Tree Drive	51st Street	La Gorce Drive	1.283	Undivided	N/A	County	Collector	1	1	35
48	Pine Tree / La Gorce – La Gorce Drive	51st Street	La Gorce Circle	1.376	Undivided	N/A	County	Collector	2	1	35

Segment Number	Segment Name	Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
		From	To								
49	47th Street	Alton Road	Pine Tree Drive	0.608	Undivided	N/A	City of Miami Beach	Collector	2	3	25
50	73rd Street	Collins Avenue	Dickens Avenue	0.273	Undivided	N/A	City of Miami Beach	Collector	4	15	25
51	77th Street	Hawthorne Avenue	Collins Avenue	0.551	Undivided	N/A	City of Miami Beach	Collector	5	9	25
52	Hawthorne Avenue	77th Street	85th Street	0.553	Undivided	N/A	City of Miami Beach	Local	2	4	25
53	85th Street	Hawthorne Avenue	Collins Avenue	0.461	Undivided	N/A	City of Miami Beach	Local	3	7	25
54	Biarritz Drive	Shore Lane	Normandy Drive	0.224	Undivided	N/A	City of Miami Beach	Local	1	4	25
55	North Shore Drive	Fairway Drive	71st Street	0.332	Undivided	N/A	City of Miami Beach	Local	1	3	25
56	Dickens Avenue	71st Street	Tatum Waterway Drive	0.523	Undivided	N/A	City of Miami Beach	Collector	5	10	25
57	Tatum Waterway Drive	Dickens Avenue	Byron Avenue	0.224	Undivided	N/A	City of Miami Beach	Collector	2	9	25

Segment Number	Segment Name	Segment Limits		Segment Length (Miles)	Existence of a Median	Median Type	Road Jurisdiction	Functional Classification	Number of Traffic Signals	Signals per Mile	Speed Limit
		From	To								
58	Byron Avenue	Tatum Waterway Drive	88th Street	0.418	Undivided	N/A	City of Miami Beach	Collector	2	5	25
59	Collins Avenue	South Pointe Drive	5th Street	0.438	Undivided	N/A	City of Miami Beach	Collector	3	7	25

Forecasted Traffic Volumes

Existing traffic volumes for the roadway segments defined above were obtained from existing Portable Traffic Monitoring Sites (PTMS) data provided on the FDOT Traffic Online website for the year 2014. These PTMS count the number of vehicles passing at specific points of a roadway, bi-directionally for two-way roads, to provide approximate values for the average annual daily traffic (AADT) volumes. The PTMS also provide average values for peak hour (K) and directional distribution (D) factors, these values were utilized to approximate peak bi-directional volumes and peak directional volumes. The K factor is the bidirectional distribution of the traffic travelling in a selected hour. It is obtained by dividing the directional peak hour traffic by the AADT. The D factor is the directional distribution of traffic travelling in the peak direction during a selected hour. It is obtained by dividing the directional volume by the bi-directional volume. **Tables 4** through **6** display the existing AADT, peak two-way volumes, and peak directional volumes, in relation to LOS and volume capacity. The LOS values reflected in the tables are the result of applying FDOT generalized LOS tables which are accepted by FDOT for planning purposes such as this TMP. FDOT tables reflect general conditions at a statewide level and may not necessarily completely reflect local conditions. THE PURPOSE OF A TMP IS TO PROVIDE A BROAD OVERALL ANALYSIS FOR THE TRANSPORTATION NETWORK of the City, more detailed examination such as a corridor analysis or any other specific traffic engineering analysis may give more accurate results for a specific roadway or area. Software such as Synchro or CORSIM, which are based on HCM methodology, may provide a more precise reflection of the existing and future conditions because the analysis performed with the software aims to duplicate local specific conditions such as driver behavior, degree of driver aggressiveness, local geometric, etc. through field observations, and calibration.

The year 2014 was taken as the base year (existing conditions) and VOLUMES WERE FORECASTED FOR THE YEARS 2025 AND 2035. The base year values were compared for concurrence to 24 hour volumes counts performed at certain locations of the City (provided in Appendix XX) and to counts provided by the City from previously performed traffic analyses. The forecasted volumes were calculated with growth factors obtained from trend analysis (the highest of: linear, exponential, and decaying exponential, provided in Appendix XX) performed using existing historical volume data for various locations within each of the three areas of City: South, Middle, and North. These growth factors were compared to those utilized on the latest MPO LRTP model to ensure concurrence. ***Figure 16*** and **Table 3** shows the growth factors for each of the City areas used to forecast future traffic volumes for the previously mentioned specific roadways links. **Tables 7** and **8** show forecasted daily, peak two-way, and peak directional volumes for the year 2025, and 2035, respectively.

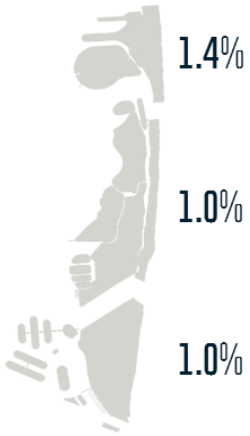


Figure 16: Annual Growth Rates for South, Middle, and North Beach

Table 3: City Area Growth Rates Used to Forecast Traffic Volumes

City Area	PTMS	Description	Growth Rate Based Upon Highest R^2	Adjusted Growth Rate[1]	Average AADT	Average Growth Rate	Weighted Average Growth Rate
South	87-9080	SR A1A/MacArthur Cswy., 1000' W Palm Isle Ent. @ R31	1.61	1.61	81625	0.86	**1.00**
	87-6059	Ramp from EB MacArthur Cswy. to NB Alton Rd., 300' E of MacArthur Cswy.	0.66	0.66	18500		
	87-2527	SR A1A/MacArthur Cswy., 200' W SR 907 (Alton Rd.)	-0.16	0.50	78406		
	87-2528	SR A1A/MacArthur Cswy., 150' N of Meridian Ave.	-2.28	0.50	38531		
	87-5159	SR A1A/Collins Ave., 200' N 5th St.	-2.13	0.50	16100		
	87-2542	SR 907/Alton Rd., 200' S of Venetian Cswy.	1.76	1.76	35333		
	87-5170	SR A1A/Collins Ave., N of 21st St.	-0.98	0.50	26625		
Middle	87-0012	SR 907/Alton Rd., 200' N of 20th St.	1.48	1.48	45000	0.93	**1.00**
	87-5388	SR 112/Arthur Godfrey Rd., 200' W Indian Creek Dr.	0.30	0.30	38750		
	87-0011	SR A1A/Collins Ave., 200' S of 4700 BLK	-1.49	0.50	40156		
	87-1018	SR 907/Alton Rd., 200' S of W 51st St.	1.21	1.21	31719		
	87-2541	SR A1A/Collins Ave., 500' S of 63rd St.	0.63	0.63	17667		
	87-2646	Indian Creek Dr., 200' S of 38th St.	-5.66	0.50	16318		
	87-2647	SR 907/Alton Rd. 200' N of Nautilus Dr.	-0.17	0.50	6330		
	87-6031	Ramp 87004025 from SB SR 907/Alton Rd. to WB I-195, 200' SW of SR 907/Alton Rd.	0.91	0.91	15727		
	87-6060	Ramp 87037201 from EB I-195 Off Ramp 87004024 to NB SR 907/Alton Rd., 400'E of Ramp 87004024	1.50	1.50	12145		
	87-6061	Ramp 87037202 from NB SR 907/Alton Rd. to WB I-195, 300' NE of SR 907/Alton Rd.	1.76	1.76	14727		
North	87-0533	SR 934/N Bay Cswy., 200' E of Treasure Dr.	0.45	0.45	34469	1.60	**1.40**
	87-5191	SR934/NE 79th St., N of Bay Cswy.; 71st St., 100' W of Rue Versailles	5.39	5.39	18500		
	87-0115	SR 934/Normandy Dr. WB, 100' W of Rue Versailles	2.26	2.26	17938		
	87-5189	SR 934/71st St., 200' W of SR A1A/Harding Ave.	-1.24	0.50	15056		
	87-0520	SR A1A/Harding Ave. One-Way Pair SB, 100' N of 87th St.	-0.75	0.50	25563		
	87-0525	SR A1A/Collins Ave. One-Way Pair NB, 100' N of 87th St.	-1.05	0.50	25875		

Notes:
1 Negative growth were adjusted to 0.5%
2 A weighted average of 1.4 instead of 1.6 was utilized for the area of North Beach based general knowledge from previous experience on projects within this area.

Table 4: Roadway Segments/Links Average Daily Volumes, LOS, and Capacity Existing Conditions

Segment Number	Segment Name	Road Jurisdiction	Functional Classification	Existing Adopted LOS Standard		FDOT Factored Volumes			Adopted City Capacity	Average Annual Daily Traffic	Existing Daily Level of Service	Remaining Daily Capacity
				FDOT	City	C	D	E				
1	SR A1A / MacArthur Causeway	State	Arterial	D	D	X	X	X	X	90566	F	X
2	SR A1A / 5th Street	State	Arterial	D	D + 50	23300	50000	50900	75000	34000	D	41000
3	SR A1A / Collins Avenue	State	Arterial	D	D + 50	5840	11840	12480	17760	16400	F	1360
4	SR A1A / Collins Avenue	State	Arterial	D	D + 50	10875	24300	25350	36450	22500	D	13950
5	SR A1A Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	14000	D	22000
6	SR A1A Indian Creek Drive	State	Arterial	D	D + 20	23300	50000	50900	60000	16000	C	44000
7	SR A1A / Indian Creek Drive	State	Arterial	D	D + 20	5840	11840	12480	14208	41000	F	-26792
8	SR A1A / Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	14000	D	22000
9	SR A1A / Collins Avenue	State	Arterial	D	D + 20	23300	50000	50900	60000	35500	D	24500
10	SR A1A Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	21000	D	15000
11	SR A1A Indian Creek Drive	State	Arterial	D	D + 20	13980	30000	30540	36000	26000	D	10000
12	SR A1A / Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	21000	D	15000
13	SR A1A / Indian Creek Drive	State	Arterial	D	D + 20	13980	30000	30540	36000	35500	F	500
14	Indian Creek Drive	City	Arterial	D	D + 20	9425	21060	21970	25272	3900	C	21372
15	Indian Creek Drive	City	Arterial	D	D + 20	9425	21060	21970	25272	3900	C	21372
16	SR A1A Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	25500	D	10500
17	SR A1A Abbott Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	25500	D	10500

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Existing Adopted LOS Standard		FDOT Factored Volumes			Adopted City Capacity	Average Annual Daily Traffic	Existing Daily Level of Service	Remaining Daily Capacity
					FDOT	City	C	D	E				
18	SR A1A	Collins Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	25500	D	10500
19		Harding Avenue	State	Arterial	D	D + 20	13980	30000	30540	36000	25500	D	10500
20	SR 112 / Julia Tuttle Causeway		State	Arterial	D	D	X	X	X	X	107473	F	X
21	SR 112 / 41st Street		State	Arterial	D	D + 20	14500	32400	33800	38880	41000	F	-2120
22	SR 934 / 79th Street Causeway		State	Arterial	D	D	X	X	X	X	39000	D	X
23	SR 934	71st Street	State	Arterial	D	D + 20	13980	30000	30540	36000	20500	D	15500
24		Normandy Drive	State	Arterial	D	D + 20	13980	30000	30540	36000	18500	D	17500
25	SR 934 / 71st Street		State	Arterial	D	D + 20	14500	32400	33800	38880	11600	C	27280
26	SR 934 / 71st Street		State	Arterial	D	D + 20	6570	13320	14040	15984	11600	D	4384
27	SR 907 / Alton Road		State	Arterial	D	D + 20	14500	32400	33800	38880	30500	D	8380
28	SR 907 / Alton Road		State	Arterial	D	D	14500	32400	33800	32400	47500	F	-15100
29	SR 907 / Alton Road		State	Arterial	D	D	14500	32400	33800	32400	33500	E	-1100
30	SR 907 / 63rd Street		State	Arterial	D	D + 20	10875	24300	25350	29160	33500	F	-4340
31	Alton Road		City	Collector	D	D + 50	14500	32400	33800	48600	5200	C	43400
32	11th Street		City	Collector	D	D + 20	5110	10360	10920	12432	6000	D	6432
33	Venetian Causeway		County	Arterial	D	X	X	X	X	X	5100	X	X
34	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	5100	X	X
35	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	5100	X	X
36	17th Street		City	Collector	D	D + 50	13050	29160	30420	43740	18900	D	24840

Segment Number	Segment Name	Road Jurisdiction	Functional Classification	Existing Adopted LOS Standard		FDOT Factored Volumes			Adopted City Capacity	Average Annual Daily Traffic	Existing Daily Level of Service	Remaining Daily Capacity
				FDOT	City	C	D	E				
37	Meridian Avenue	City	Collector	D	D + 20	5110	10360	10920	12432	8000	D	4432
38	Meridian Avenue	City	Collector	D	D + 20	5475	11100	11700	13320	3600	C	9720
39	28th Street	City	Collector	D	D + 20	5475	11100	11700	13320	3600	C	9720
40	Washington Avenue	City	Collector	D	D + 50	13050	29160	30420	43740	18700	D	25040
41	South Pointe Drive	City	Collector	D	D + 20	13050	29160	30420	34992	5200	C	29792
42	West Avenue	City	Collector	D	D + 20	5475	11100	11700	13320	15000	F	-1680
43	North Bay Road	City	Local	D	X	X	X	X	X	X	X	X
44	Prairie Avenue	City	Collector	D	D + 20	5475	11100	11700	13320	3500	C	9820
45	Pine Tree Drive	County	Collector	D	D + 20	X	X	X	X	16200	D	X
46	Pine Tree Drive	County	Collector	D	D + 20	13050	29160	30420	34992	11000	D	23992
47	Pine Tree / La Gorce — Pine Tree Drive	County	Collector	D	D + 20	7250	16200	16900	19440	5100	C	14340
48	Pine Tree / La Gorce — La Gorce Drive	County	Collector	D	D + 20	7250	16200	16900	19440	4800	C	14640
49	47th Street	City	Collector	D	D + 20	5110	10360	10920	12432	3900	C	8532
50	73rd Street	City	Collector	D	D + 20	X	X	X	X	X	X	X
51	77th Street	City	Collector	D	D + 20	5110	10360	10920	12432	2100	C	10332
52	Hawthorne Avenue	City	Local	D	X	5110	10360	10920	X	2100	C	X
53	85th Street	City	Local	D	X	5110	10360	10920	X	2100	C	X
54	Biarritz Drive	City	Local	D	X	X	X	X	X	X	X	X
55	North Shore Drive	City	Local	D	X	X	X	X	X	X	X	X
56	Dickens Avenue	City	Collector	D	X	X	X	X	X	3900	C	X

Segment Number	Segment Name	Road Jurisdiction	Functional Classification	Existing Adopted LOS Standard		FDOT Factored Volumes			Adopted City Capacity	Average Annual Daily Traffic	Existing Daily Level of Service	Remaining Daily Capacity
				FDOT	City	C	D	E				
57	Tatum Waterway Drive	City	Collector	D	X	X	X	X	X	3900	C	X
58	Byron Avenue	City	Collector	D	X	X	X	X	X	3900	C	X
59	Collins Avenue	City	Collector	D	X	5110	10360	10920	X	5200	D	X

X = Information Not Available

Table 5: Roadway Segments/Links Peak Two-Way Volumes, LOS, and Capacity Existing Conditions

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Adopted Level of Service Standard		FDOT Factored Peak Two Way Volumes			Adopted City Capacity	Peak Hour Two Way Volume	Existing Level of Service (Peak Two Way)	Remaining Capacity
					FDOT	City	C	D	E				
1	SR A1A / MacArthur Causeway		State	Arterial	D	D	X	X	X	X	8151	F	X
2	SR A1A / 5th Street		State	Arterial	D	D + 50	2090	4500	4590	6750	3060	D	3690
3	SR A1A / Collins Avenue		State	Arterial	D	D + 50	528	1064	1128	1596	1476	F	120
4	SR A1A / Collins Avenue		State	Arterial	D	D + 50	982.5	2190	2280	3285	2025	D	1260
5	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	1260	C	1980
6		Indian Creek Drive	State	Arterial	D	D + 20	2090	4500	4590	5400	1440	D	3960
7	SR A1A / Indian Creek Drive		State	Arterial	D	D + 20	528	1064	1128	1276.8	3690	F	-2413
8	SR A1A / Collins Avenue		State	Arterial	D	D + 20	1254	2700	2754	3240	1260	C	1980
9	SR A1A / Collins Avenue		State	Arterial	D	D + 20	2090	4500	4590	5400	3195	D	2205
10	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	1890	D	1350
11		Indian Creek Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	2340	D	900
12	SR A1A / Collins Avenue		State	Arterial	D	D + 20	1254	2700	2754	3240	1890	D	1350
13	SR A1A / Indian Creek Drive		State	Arterial	D	D + 20	2090	4500	4590	5400	3195	D	2205
14	Indian Creek Drive		City	Arterial	D	D + 20	851.5	1898	1976	2277.6	351	C	1927
15	Indian Creek Drive		City	Arterial	D	D + 20	851.5	1898	1976	2277.6	351	C	1927
16	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	2295	D	945
17		Abbott Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	2295	D	945

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Adopted Level of Service Standard		FDOT Factored Peak Two Way Volumes			Adopted City Capacity	Peak Hour Two Way Volume	Existing Level of Service (Peak Two Way)	Remaining Capacity
					FDOT	City	C	D	E				
18	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	2295	D	945
19		Harding Avenue	State	Arterial	D	D + 20	1254	2700	2754	3240	2295	D	945
20	SR 112 / Julia Tuttle Causeway		State	Arterial	D	D	X	X	X	X	9673	F	X
21	SR 112 / 41st Street		State	Arterial	D	D + 20	1310	2920	3040	3504	3690	F	-186
22	SR 934 / 79th Street Causeway		State	Arterial	D	D	X	X	X	X	3510	D	X
23	SR 934	71st Street	State	Arterial	D	D + 20	1254	2700	2754	3240	1845	D	1395
24		Normandy Drive	State	Arterial	D	D + 20	1254	2700	2754	3240	1665	D	1575
25	SR 934 / 71st Street		State	Arterial	D	D + 20	1310	2920	3040	3504	1044	C	2460
26	SR 934 / 71st Street		State	Arterial	D	D + 20	594	1197	1269	1436.4	1044	D	392
27	SR 907 / Alton Road		State	Arterial	D	D + 20	1310	2920	3040	3504	2745	D	759
28	SR 907 / Alton Road		State	Arterial	D	D	1310	2920	3040	2920	4275	F	-1355
29	SR 907 / Alton Road		State	Arterial	D	D	1310	2920	3040	2920	3015	E	-95
30	SR 907 / 63rd Street		State	Arterial	D	D + 20	1244.5	2774	2888	3328.8	3015	F	314
31	Alton Road		City	Collector	D	D + 50	1310	2920	3040	4380	468	C	3912
32	11th Street		City	Collector	D	D + 20	462	931	987	1117.2	540	D	577
33	Venetian Causeway		County	Arterial	D	X	X	X	X	X	459	X	X
34	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	459	X	X
35	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	459	X	X
36	17th Street		City	Collector	D	D + 50	1179	2628	2736	3942	1701	D	2241

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Adopted Level of Service Standard		FDOT Factored Peak Two Way Volumes			Adopted City Capacity	Peak Hour Two Way Volume	Existing Level of Service (Peak Two Way)	Remaining Capacity
					FDOT	City	C	D	E				
37	Meridian Avenue		City	Collector	D	D + 20	462	931	987	1117.2	720	D	397
38	Meridian Avenue		City	Collector	D	D + 20	495	997.5	1057.5	1197	324	C	873
39	28th Street		City	Collector	D	D + 20	495	997.5	1057.5	1197	324	C	873
40	Washington Avenue		City	Collector	D	D + 50	1179	2628	2736	3942	1683	D	2259
41	South Pointe Drive		City	Collector	D	D + 20	1179	2628	2736	3153.6	468	C	2686
42	West Avenue		City	Collector	D	D + 20	495	997.5	1057.5	1197	1350	F	-153
43	North Bay Road		City	Local	D	X	X	X	X	X	X	X	X
44	Prairie Avenue		City	Collector	D	D + 20	462	931	987	1117.2	315	C	802
45	Pine Tree Drive		County	Collector	D	D + 20	1179	2628	2736	3153.6	1458	D	1696
46	Pine Tree Drive		County	Collector	D	D + 20	1179	2628	2736	3153.6	990	D	2164
47	Pine Tree / La Gorce	Pine Tree Drive	County	Collector	D	D + 20	655	1460	1520	1752	459	C	1293
48		La Gorce Drive	County	Collector	D	D + 20	655	1460	1520	1752	432	C	1320
49	47th Street		City	Collector	D	D + 20	462	931	987	1117.2	351	C	766
50	73rd Street		City	Collector	D	D + 20	X	X	X	X	X	X	X
51	77th Street		City	Collector	D	D + 20	462	931	987	1117.2	189	C	928
52	Hawthorne Avenue		City	Local	D	X	462	931	987	X	189	C	X
53	85th Street		City	Local	D	X	462	931	987	X	189	C	X
54	Biarritz Drive		City	Local	D	X	X	X	X	X	X	X	X
55	North Shore Drive		City	Local	D	X	X	X	X	X	X	X	X
56	Dickens Avenue		City	Collector	D	X	X	X	X	X	351	C	X

Segment Number	Segment Name	Road Jurisdiction	Functional Classification	Adopted Level of Service Standard		FDOT Factored Peak Two Way Volumes			Adopted City Capacity	Peak Hour Two Way Volume	Existing Level of Service (Peak Two Way)	Remaining Capacity
				FDOT	City	C	D	E				
57	Tatum Waterway Drive	City	Collector	D	X	X	X	X	X	351	C	X
58	Byron Avenue	City	Collector	D	X	X	X	X	X	351	C	X
59	Collins Avenue	City	Collector	D	X	462	931	987	4380	468	D	3912

X = Information Not Available

Table 6: Roadway Segments/Links Peak Directional Volumes, LOS, and Capacity Existing Conditions

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Existing Adopted Level of Service Standard		FDOT Factored Peak Directional Volumes			Adopted City Capacity	Peak Hour Directional Volume	Existing Level of Service (Peak Directional)	Remaining Capacity
					FDOT	City	C	D	E				
1	SR A1A / MacArthur Causeway		State	Arterial	D	D	X	X	X	X	8151	F	X
2	SR A1A / 5th Street		State	Arterial	D	D + 50	1170	2520	2560	3780	3057	D	723
3	SR A1A / Collins Avenue		State	Arterial	D	D + 50	296	600	640	900	799	F	101
4	SR A1A / Collins Avenue		State	Arterial	D	D + 50	547.5	1222.5	1275	1833.75	1061	D	773
5	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	1259	C	2370
6		Indian Creek Drive	State	Arterial	D	D + 20	1170	2520	2560	3024	1439	D	1585
7	SR A1A / Indian Creek Drive		State	Arterial	D	D + 20	296	600	640	720	1934	F	-1214
8	SR A1A / Collins Avenue		State	Arterial	D	D + 20	1404	3024	3072	3628.8	1259	C	2370
9	SR A1A / Collins Avenue		State	Arterial	D	D + 20	1170	2520	2560	3024	1674	D	1350
10	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	1888	D	1741
11		Indian Creek Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	2338	D	1291
12	SR A1A / Collins Avenue		State	Arterial	D	D + 20	1404	3024	3072	3628.8	1888	D	1741
13	SR A1A / Indian Creek Drive		State	Arterial	D	D + 20	1170	2520	2560	3024	1674	D	1350
14	Indian Creek Drive		City	Arterial	D	D + 20	474.5	1059.5	1105	1271.4	207	C	1065
15	Indian Creek Drive		City	Arterial	D	D + 20	474.5	1059.5	1105	1271.4	207	C	1065
16	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	2293	D	1336
17		Abbott Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	2293	D	1336

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Existing Adopted Level of Service Standard		FDOT Factored Peak Directional Volumes			Adopted City Capacity	Peak Hour Directional Volume	Existing Level of Service (Peak Directional)	Remaining Capacity
					FDOT	City	C	D	E				
18	SR A1A	Collins Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	2293	D	1336
19		Harding Avenue	State	Arterial	D	D + 20	1404	3024	3072	3628.8	2293	D	1336
20	SR 112 / Julia Tuttle Causeway		State	Arterial	D	D	X	X	X	X	X	F	X
21	SR 112 / 41st Street		State	Arterial	D	D + 20	730	1630	1700	1956	1934	F	22
22	SR 934 / 79th Street Causeway		State	Arterial	D	D	X	X	X	X	X	D	X
23	SR 934	71st Street	State	Arterial	D	D + 20	1404	3024	3072	3628.8	1843	D	1786
24		Normandy Drive	State	Arterial	D	D + 20	1404	3024	3072	3628.8	1663	D	1965
25	SR 934 / 71st Street		State	Arterial	D	D + 20	730	1630	1700	1956	547	C	1409
26	SR 934 / 71st Street		State	Arterial	D	D + 20	333	675	720	810	547	D	263
27	SR 907 / Alton Road		State	Arterial	D	D + 20	730	1630	1700	1956	1438	D	518
28	SR 907 / Alton Road		State	Arterial	D	D	730	1630	1700	1630	2240	F	-610
29	SR 907 / Alton Road		State	Arterial	D	D	730	1630	1700	1630	1688	E	-58
30	SR 907 / 63rd Street		State	Arterial	D	D + 20	693.5	1548.5	1615	1858.2	1688	F	170
31	Alton Road		City	Collector	D	D + 50	730	1630	1700	2445	262	C	2183
32	11th Street		City	Collector	D	D + 20	259	525	560	630	318	D	312
33	Venetian Causeway		County	Arterial	D	X	X	X	X	X	X	X	X
34	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	X	X	X
35	Dade Boulevard		County	Arterial	D	D + 50	X	X	X	X	X	X	X
36	17th Street		City	Collector	D	D + 50	657	1467	1530	2200.5	1002	D	1199

Segment Number	Segment Name		Road Jurisdiction	Functional Classification	Existing Adopted Level of Service Standard		FDOT Factored Peak Directional Volumes			Adopted City Capacity	Peak Hour Directional Volume	Existing Level of Service (Peak Directional)	Remaining Capacity
					FDOT	City	C	D	E				
37	Meridian Avenue		City	Collector	D	D + 20	259	525	560	630	424	D	206
38	Meridian Avenue		City	Collector	D	D + 20	277.5	562.5	600	675	191	C	484
39	28th Street		City	Collector	D	D + 20	277.5	562.5	600	675	191	C	484
40	Washington Avenue		City	Collector	D	D + 50	657	1467	1530	2200.5	942	D	1258
41	South Pointe Drive		City	Collector	D	D + 20	657	1467	1530	1760.4	276	C	1485
42	West Avenue		City	Collector	D	D + 20	277.5	562.5	600	675	795	F	-120
43	North Bay Road		City	Local	D	X	X	X	X	X	X	X	X
44	Prairie Avenue		City	Collector	D	D + 20	259	525	560	630	165	C	465
45	Pine Tree Drive		County	Collector	D	D + 20	657	1467	1530	1760.4	859	D	902
46	Pine Tree Drive		County	Collector	D	D + 20	657	1467	1530	1760.4	583	D	1177
47	Pine Tree / La Gorce	Pine Tree Drive	County	Collector	D	D + 20	803	1793	1870	2151.6	459	C	1693
48		La Gorce Drive	County	Collector	D	D + 20	803	1793	1870	2151.6	432	C	1720
49	47th Street		City	Collector	D	D + 20	259	525	560	630	207	C	423
50	73rd Street		City	Collector	D	D + 20	X	X	X	X	X	X	X
51	77th Street		City	Collector	D	D + 20	259	525	560	630	111	C	519
52	Hawthorne Avenue		City	Local	D	X	259	525	560	X	111	C	X
53	85th Street		City	Local	D	X	259	525	560	X	111	C	X
54	Biarritz Drive		City	Local	D	X	X	X	X	X	X	X	X
55	North Shore Drive		City	Local	D	X	X	X	X	X	X	X	X
56	Dickens Avenue		City	Collector	D	X	X	X	X	X	207	C	X

Segment Number	Segment Name	Road Jurisdiction	Functional Classification	Existing Adopted Level of Service Standard		FDOT Factored Peak Directional Volumes			Adopted City Capacity	Peak Hour Directional Volume	Existing Level of Service (Peak Directional)	Remaining Capacity
				FDOT	City	C	D	E				
57	Tatum Waterway Drive	City	Collector	D	X	X	X	X	X	207	C	X
58	Byron Avenue	City	Collector	D	X	X	X	X	X	207	C	X
59	Collins Avenue	City	Collector	D	X	259	525	560	2445	276	D	2169

X = Information Not Available

Table 7: Roadway Segments/Links Forecasted Daily, Two-Way Peak, and Peak Directional Volumes, and LOS for 2025

Segment Number	Segment Name		Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2025)	Future Daily LOS (2025)	Future Peak Two-Way Volumes (2025)	Future Peak Two-Way LOS (2025)	Future Peak Directional Volumes (2025)	Future Peak Directional LOS (2025)
			From	To									
1	SR A1A / MacArthur Causeway		City Limits	Alton Road	State	Arterial	90566	X	X	X	X	X	X
2	SR A1A / 5th Street		Alton Road	Collins Avenue	State	Arterial	34000	37557	D	3380	D	3380	F
3	SR A1A / Collins Avenue		5th Street	15th Street	State	Arterial	16400	18116	F	1630	F	880	F
4	SR A1A / Collins Avenue		15th Street	26th Street	State	Arterial	22500	24854	E	2240	E	1170	D
5	SR A1A	Collins Avenue	26th Street	41st Street	State	Arterial	14000	15465	D	1390	D	1390	C
6		Indian Creek Drive	26th Street	41st Street	State	Arterial	16000	17674	C	1590	C	1590	D
7	SR A1A / Indian Creek Drive		41st Street	44th Street	State	Arterial	41000	45290	F	4080	F	2140	F
8	SR A1A / Collins Avenue		41st Street	44th Street	State	Arterial	14000	15465	D	1390	D	1390	C
9	SR A1A / Collins Avenue		44th Street	5800 Block	State	Arterial	35500	39214	D	3530	D	1850	D
10	SR A1A	Collins Avenue	5800 Block	63rd Street	State	Arterial	21000	23197	D	2090	D	2090	D
11		Indian Creek Avenue	5800 Block	63rd Street	State	Arterial	26000	28168	D	2540	D	2530	D
12	SR A1A / Collins Avenue		63rd Street	71st street	State	Arterial	21000	24132	D	2170	D	2170	D
13	SR A1A / Indian Creek Drive		63rd Street	Abbott Avenue	State	Arterial	35500	40795	D	3670	D	1920	D

Segment Number	Segment Name		Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2025)	Future Daily LOS (2025)	Future Peak Two-Way Volumes (2025)	Future Peak Two-Way LOS (2025)	Future Peak Directional Volumes (2025)	Future Peak Directional LOS (2025)
			From	To									
14	Indian Creek Drive		Abbott Avenue	Byron Avenue	City	Arterial	3900	4482	C	400	C	240	C
15	Indian Creek Drive		Byron Avenue	71st Street	City	Arterial	3900	4482	C	400	C	240	C
16	SR A1A	Collins Avenue	71st Street	73rd Street	State	Arterial	25500	29304	D	2640	D	2630	D
17		Abbott Avenue	Indian Creek Drive	73rd Street	State	Arterial	25500	29304	D	2640	D	2630	D
18	SR A1A	Collins Avenue	73rd Street	88th Street	State	Arterial	25500	29304	D	2640	D	2630	D
19		Harding Avenue	73rd Street	88th Street	State	Arterial	25500	29304	D	2640	D	2630	D
20	SR 112 / Julia Tuttle Causeway		City Limits	Alton Road	State	Arterial	107473	X	X	X	X	X	X
21	SR 112 / 41st Street		Alton Road	Collins Avenue	State	Arterial	41000	45290	F	4080	F	2140	F
22	SR 934 / 79th Street Causeway		City Limits	Bay Drive	State	Arterial	39000	X	X	X	X	X	X
23	SR 934	71st Street	W Bay Drive	E Bay Drive	State	Arterial	20500	23558	D	2120	D	2120	D
24		Normandy Drive	W Bay Drive	E Bay Drive	State	Arterial	18500	21259	D	1910	D	1910	D
25	SR 934 / 71st Street		E Bay Drive	Dickens Avenue	State	Arterial	11600	13330	C	1200	C	630	C
26	SR 934 / 71st Street		Dickens Avenue	Collins Avenue	State	Arterial	11600	13330	E	1200	E	630	D
27	SR 907 / Alton Road		5th Street	Dade Boulevard	State	Arterial	30500	33691	E	3030	E	1590	D

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2025)	Future Daily LOS (2025)	Future Peak Two-Way Volumes (2025)	Future Peak Two-Way LOS (2025)	Future Peak Directional Volumes (2025)	Future Peak Directional LOS (2025)
		From	To									
28	SR 907 / Alton Road	Dade Boulevard	41s Street	State	Arterial	47500	52470	F	4720	F	2470	F
29	SR 907 / Alton Road	41st Street	63rd Street	State	Arterial	33500	37005	F	3330	F	1870	F
30	SR 907 / 63rd Street	Alton Road	Collins Avenue	State	Arterial	33500	37005	F	3330	F	1870	F
31	Alton Road	South Pointe Drive	5th Street	City	Collector	5200	5744	C	520	C	290	C
32	11th Street	Alton Road	Washington Avenue	City	Collector	6000	6628	D	600	D	350	D
33	Venetian Causeway	City Limits	Dade Boulevard	County	Arterial	5100	X	X	X	X	X	X
34	Dade Boulevard	Venetian Causeway	Alton Road	County	Arterial	5100	X	X	X	X	X	X
35	Dade Boulevard	Alton Road	Pine Tree Drive	County	Arterial	5100	X	X	X	X	X	X
36	17th Street	Dade Boulevard	Collins Avenue	City	Collector	18900	20877	D	1880	D	1110	D
37	Meridian Avenue	5th Street	Dade Boulevard	City	Collector	8000	8837	D	800	D	470	D
38	Meridian Avenue	Dade Boulevard	28th Street	City	Collector	3600	8837	D	800	D	450	D
39	28th Street	Meridian Avenue	Pine Tree Drive	City	Collector	3600	8837	D	800	D	450	D
40	Washington Avenue	South Pointe Drive	Dade Boulevard	City	Collector	18700	20656	D	1860	D	1040	D

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2025)	Future Daily LOS (2025)	Future Peak Two-Way Volumes (2025)	Future Peak Two-Way LOS (2025)	Future Peak Directional Volumes (2025)	Future Peak Directional LOS (2025)
		From	To									
41	South Pointe Drive	Alton Road	Ocean Drive	City	Collector	5200	5744	C	520	C	300	C
42	West Avenue	5th Street	17th Street	City	Collector	15000	16569	F	1490	F	880	F
43	North Bay Road	West Avenue	La Gorce Drive	City	Local	X	X	X	X	X	X	X
44	Prairie Avenue	Dade Boulevard	47th Street	City	Collector	3500	3866	C	350	C	180	C
45	Pine Tree Drive	Dade Boulevard	47th Street	County	Collector	16200	17895	D	1610	D	950	D
46	Pine Tree Drive	47th Street	51st Street	County	Collector	11000	17895	D	1610	D	950	D
47	Pine Tree / La Gorce – Pine Tree Drive	51st Street	La Gorce Drive	County	Collector	5100	5634	C	510	C	510	C
48	Pine Tree / La Gorce – La Gorce Drive	51st Street	La Gorce Circle	County	Collector	4800	5302	C	480	C	480	C
49	47th Street	Alton Road	Pine Tree Drive	City	Collector	3900	4308	C	390	C	230	C
50	73rd Street	Collins Avenue	Dickens Avenue	City	Collector	X	X	X	X	X	X	X
51	77th Street	Hawthorne Avenue	Collins Avenue	City	Collector	2100	2413	C	220	C	130	C
52	Hawthorne Avenue	77th Street	85th Street	City	Local	2100	2413	C	220	C	130	C
53	85th Street	Hawthorne Avenue	Collins Avenue	City	Local	2100	2413	C	220	C	130	C
54	Biarritz Drive	Shore Lane	Normandy Drive	City	Local	X	X	X	X	X	X	X

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2025)	Future Daily LOS (2025)	Future Peak Two-Way Volumes (2025)	Future Peak Two-Way LOS (2025)	Future Peak Directional Volumes (2025)	Future Peak Directional LOS (2025)
		From	To									
55	North Shore Drive	Fairway Drive	71st Street	City	Local	X	X	X	X	X	X	X
56	Dickens Avenue	71st Street	Tatum Waterway Drive	City	Collector	3900	4482	C	400	C	240	C
57	Tatum Waterway Drive	Dickens Avenue	Byron Avenue	City	Collector	3900	4482	C	400	C	240	C
58	Byron Avenue	Tatum Waterway Drive	88th Street	City	Collector	3900	4482	C	400	C	240	C
59	Collins Avenue	South Pointe Drive	5th Street	City	Collector	5200	5744	D	520	D	300	D

X = Information Not Available

Table 8: Roadway Segments/Links Forecasted Daily, Two-Way Peak, and Peak Directional Volumes, and LOS for 2035

Segment Number	Segment Name		Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2035)	Future Daily LOS (2035)	Future Peak Two-Way Volumes (2035)	Future Peak Two-Way LOS (2035)	Future Peak Directional Volumes (2035)	Future Peak Directional LOS (2035)
			From	To									
1	SR A1A / MacArthur Causeway		City Limits	Alton Road	State	Arterial	90566	X	X	X	X	X	X
2	SR A1A / 5th Street		Alton Road	Collins Avenue	State	Arterial	34000	41486	D	3730	D	3730	F
3	SR A1A / Collins Avenue		5th Street	15th Street	State	Arterial	16400	20011	F	1800	F	970	F
4	SR A1A / Collins Avenue		15th Street	26th Street	State	Arterial	22500	27454	F	2470	F	1290	F
5	SR A1A	Collins Avenue	26th Street	41st Street	State	Arterial	14000	17083	D	1540	D	1540	D
6		Indian Creek Drive	26th Street	41st Street	State	Arterial	16000	19523	C	1760	C	1760	D
7	SR A1A / Indian Creek Drive		41st Street	44th Street	State	Arterial	41000	50028	F	4500	F	2360	F
8	SR A1A / Collins Avenue		41st Street	44th Street	State	Arterial	14000	17083	D	1540	D	1540	D
9	SR A1A / Collins Avenue		44th Street	5800 Block	State	Arterial	35500	43317	D	3900	D	2,040	D
10	SR A1A	Collins Avenue	5800 Block	63rd Street	State	Arterial	21000	25624	D	2310	D	2310	D
11		Indian Creek Avenue	5800 Block	63rd Street	State	Arterial	26000	31115	F	2800	F	2800	D
12	SR A1A / Collins Avenue		63rd Street	71st street	State	Arterial	21000	27732	D	2500	D	2490	D
13	SR A1A / Indian Creek Drive		63rd Street	Abbott Avenue	State	Arterial	35500	46880	D	4220	D	2210	D

Segment Number	Segment Name		Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2035)	Future Daily LOS (2035)	Future Peak Two-Way Volumes (2035)	Future Peak Two-Way LOS (2035)	Future Peak Directional Volumes (2035)	Future Peak Directional LOS (2035)
			From	To									
14	Indian Creek Drive		Abbott Avenue	Byron Avenue	City	Arterial	3900	5150	C	460	C	270	C
15	Indian Creek Drive		Byron Avenue	71st Street	City	Arterial	3900	5150	C	460	C	270	C
16	SR A1A	Collins Avenue	71st Street	73rd Street	State	Arterial	25500	33674	F	3030	F	3030	E
17		Abbott Avenue	Indian Creek Drive	73rd Street	State	Arterial	25500	33674	F	3030	F	3030	E
18	SR A1A	Collins Avenue	73rd Street	88th Street	State	Arterial	25500	33674	F	3030	F	3030	E
19		Harding Avenue	73rd Street	88th Street	State	Arterial	25500	33674	F	3030	F	3030	E
20	SR 112 / Julia Tuttle Causeway		City Limits	Alton Road	State	Arterial	107473	X	X	X	X	X	X
21	SR 112 / 41st Street		Alton Road	Collins Avenue	State	Arterial	41000	50028	F	4500	F	2360	F
22	SR 934 / 79th Street Causeway		City Limits	Bay Drive	State	Arterial	39000	X	X	X	X	X	X
23	SR 934	71st Street	W Bay Drive	E Bay Drive	State	Arterial	20500	27072	D	2440	D	2430	D
24		Normandy Drive	W Bay Drive	E Bay Drive	State	Arterial	18500	24430	D	2200	D	2200	D
25	SR 934 / 71st Street		E Bay Drive	Dickens Avenue	State	Arterial	11600	15319	D	1380	D	720	C
26	SR 934 / 71st Street		Dickens Avenue	Collins Avenue	State	Arterial	11600	15319	F	1380	F	720	E
27	SR 907 / Alton Road		5th Street	Dade Boulevard	State	Arterial	30500	37216	F	3350	F	1760	F

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2035)	Future Daily LOS (2035)	Future Peak Two-Way Volumes (2035)	Future Peak Two-Way LOS (2035)	Future Peak Directional Volumes (2035)	Future Peak Directional LOS (2035)
		From	To									
28	SR 907 / Alton Road	Dade Boulevard	41s Street	State	Arterial	47500	57959	F	5220	F	2730	F
29	SR 907 / Alton Road	41st Street	63rd Street	State	Arterial	33500	40876	F	3680	F	2060	F
30	SR 907 / 63rd Street	Alton Road	Collins Avenue	State	Arterial	33500	40876	F	3680	F	2060	F
31	Alton Road	South Pointe Drive	5th Street	City	Collector	5200	6345	C	570	C	320	C
32	11th Street	Alton Road	Washington Avenue	City	Collector	6000	7321	D	660	D	390	D
33	Venetian Causeway	City Limits	Dade Boulevard	County	Arterial	5100	X	X	X	X	X	X
34	Dade Boulevard	Venetian Causeway	Alton Road	County	Arterial	5100	X	X	X	X	X	X
35	Dade Boulevard	Alton Road	Pine Tree Drive	County	Arterial	5100	X	X	X	X	X	X
36	17th Street	Dade Boulevard	Collins Avenue	City	Collector	18900	23062	D	2080	D	1220	D
37	Meridian Avenue	5th Street	Dade Boulevard	City	Collector	8000	9762	D	880	D	520	D
38	Meridian Avenue	Dade Boulevard	28th Street	City	Collector	3600	9762	D	880	D	500	D
39	28th Street	Meridian Avenue	Pine Tree Drive	City	Collector	3600	9762	D	880	D	500	D
40	Washington Avenue	South Pointe Drive	Dade Boulevard	City	Collector	18700	22818	D	2050	D	1210	D

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2035)	Future Daily LOS (2035)	Future Peak Two-Way Volumes (2035)	Future Peak Two-Way LOS (2035)	Future Peak Directional Volumes (2035)	Future Peak Directional LOS (2035)
		From	To									
41	South Pointe Drive	Alton Road	Ocean Drive	City	Collector	5200	6345	C	570	C	340	C
42	West Avenue	5th Street	17th Street	City	Collector	15000	18303	F	1650	F	970	F
43	North Bay Road	West Avenue	La Gorce Drive	City	Local	X	X	X	X	X	X	X
44	Prairie Avenue	Dade Boulevard	47th Street	City	Collector	3500	4271	C	380	C	230	C
45	Pine Tree Drive	Dade Boulevard	47th Street	County	Collector	16200	19767	D	1780	D	1050	D
46	Pine Tree Drive	47th Street	51st Street	County	Collector	11000	19767	D	1780	D	1050	D
47	Pine Tree / La Gorce – Pine Tree Drive	51st Street	La Gorce Drive	County	Collector	5100	6223	C	560	C	560	C
48	Pine Tree / La Gorce – La Gorce Drive	51st Street	La Gorce Circle	County	Collector	4800	5857	C	530	C	530	C
49	47th Street	Alton Road	Pine Tree Drive	City	Collector	3900	4759	C	430	C	250	C
50	73rd Street	Collins Avenue	Dickens Avenue	City	Collector	X	X	X	X	X	X	X
51	77th Street	Hawthorne Avenue	Collins Avenue	City	Collector	2100	2773	C	250	C	150	C
52	Hawthorne Avenue	77th Street	85th Street	City	Local	2100	2773	C	250	C	150	C
53	85th Street	Hawthorne Avenue	Collins Avenue	City	Local	2100	2773	C	250	C	150	C
54	Biarritz Drive	Shore Lane	Normandy Drive	City	Local	X	X	X	X	X	X	X

Segment Number	Segment Name	Segment Limits		Road Jurisdiction	Functional Classification	Existing AADT	Future AADT (2035)	Future Daily LOS (2035)	Future Peak Two-Way Volumes (2035)	Future Peak Two-Way LOS (2035)	Future Peak Directional Volumes (2035)	Future Peak Directional LOS (2035)
		From	To									
55	North Shore Drive	Fairway Drive	71st Street	City	Local	X	X	X	X	X	X	X
56	Dickens Avenue	71st Street	Tatum Waterway Drive	City	Collector	3900	5150	C	460	C	270	C
57	Tatum Waterway Drive	Dickens Avenue	Byron Avenue	City	Collector	3900	5150	C	460	C	270	C
58	Byron Avenue	Tatum Waterway Drive	88th Street	City	Collector	3900	5150	C	460	C	270	C
59	Collins Avenue	South Pointe Drive	5th Street	City	Collector	5200	6345	D	570	D	340	D

X = Information Not Available

Parking within the City

When it comes to the automobile mode of travel, roadways and bridges are not the only infrastructures supporting the weight of creating an effective transportation system. An AUTOMOBILE TRIP WILL NEVER BE COMPLETE IF PARKING IS NOT AVAILABLE. Beyond affecting the timeliness of an automobilist's trip, parking has the potential to mold the City by shaping many things; from the enjoyment of its visitors to the economic growth and sense of community its many residents and visitors experience. However, within the crowded built environment of such a rich and dense City as Miami Beach, parking needs to be delicately balance between other needs such as multi-modal accommodation, surrounding land use, and quality transportation roadways.

Since before 2004 and most recently in 2014, City efforts have been quantifying and analyzing the adequacy of parking throughout Miami Beach with several studies performed by Walker Parking Consultants. The knowledge assembled from these studies along with other collaborations and intercity analyses have conflated to form the City's Vision for parking management:

"COMMUNITY SUSTAINABILITY IS PARTLY ACHIEVED WHEN PARKING IS MANAGED AS A CONTEXT SENSITIVE/LAND-USE DEPENDENT INVESTMENT THAT MAY IMPROVE OR IMPACT THE QUALITY OF THE TRANSPORTATION SYSTEM IF NOT PROPERLY ALLOCATED."

Simply put, parking, as all other elements of an urban setting, shapes the way people interact with other roadway users and sways their inclinations to travel to surrounding businesses and developments, jobs, and even their homes. The way parking is allocated in a community depends on multiple levels of policies and regulations and affects the City's aesthetics, livability, and traffic congestion. In order to fully grasp this concept and the many consequences parking allocation has, several key statistics need to be revisited.

Existing Parking Inventory

To fully assess the existing conditions of the City's automobile parking accommodations, an inventory of the existing parking supply and demand was performed through research of existing relevant literature. To be exact, the data presented herein were obtained from the Parking Demand Analyses performed by Walker parking Consultant in 2014. **Tables 9** through **12** show the parking supply and demand for the areas of South and North Beach. It should be noted that no study was performed for the area of Middle Beach; hence no information is presented for that region of the City. More details regarding the amount of parking spaces and their occupancy may be found in these reports.

Additionally, **Tables 13** through **16** register City provided data for off-street parking facilities within the areas of South, Middle, and North Beach, respectively. To provide visual context of their location, and to serve as a canvas for an updatable inventory, ***Figure 17*** graphically depicts the existing off-street City parking facilities.

Table 9: Existing South Beach Parking Supply (2014 South Beach Walker Parking Demand Analysis)

South Beach Areas	Amount of Parking Spaces						
	On-Street	Off-Street					Total
		City-Owned Garages	City-Owned Surface Lots	Privately-Owned Public Garages	Privately-Owned Public Surface Lots	Private Parking	
Alton Road Corridor from SR A1A/5th Street to 17th Street and from Bay Road/West Avenue to Lenox Avenue	978	1,050	93	698	71	4,004	**6,894**
Convention Center & Sunset Harbour From 17th Street to 23rd Street/Dade Boulevard and from SR 907/Alton Road to SR A1A/Collins Avenue	930	1,081	1,391	300	50	858	**4,610**
Flamingo/Lummus Neighborhood from SR A1A/5th Street to 17th Street and from Lenox Avenue to Pennsylvania/Drexel Avenue	2,944	1,460	776	780	0	120	**6,080**
Ocean Drive Corridor from SR A1A/5th Street to 17th Street and from Pennsylvania/Drexel Avenue to SR A1A/Collins Avenue/Ocean Drive	1,616	2,424	126	1,897	213	1,029	**7,305**
South Pointe Neighborhood from South Pointe Drive to SR A1A/5th Street and from SR 907/Alton Road to Ocean Drive	1,101	0	342	311	182	819	**2,755**
Total Parking Spaces Supplied by Facility Type	**7,569**	**6,015**	**2,728**	**3,986**	**516**	**6,830**	**27,644**

Table 10: Existing South Beach Parking Demand (2014 South Beach Walker Parking Demand Analysis)

South Beach Areas	Maximum Observed Occupancy						
	On-Street	Off-Street					Average Parking Demand
		City-Owned Garages	City-Owned Surface Lots	Privately-Owned Public Garages	Privately-Owned Public Surface Lots	Private Parking	
Alton Road Corridor from SR A1A/5th Street to 17th Street and from Bay Road/West Avenue to Lenox Avenue	80%	52%	88%	83%	79%	95%	**81%**
Convention Center & Sunset Harbour From 17th Street to 23rd Street/Dade Boulevard and from SR 907/Alton Road to SR A1A/Collins Avenue	83%	63%	100%	100%	96%	82%	**81%**
Flamingo/Lummus Neighborhood from SR A1A/5th Street to 17th Street and from Lenox Avenue to Pennsylvania/Drexel Avenue	91%	100%	91%	38%	-	75%	**82%**
Ocean Drive Corridor from SR A1A/5th Street to 17th Street and from Pennsylvania/Drexel Avenue to SR A1A/Collins Avenue/Ocean Drive	91%	75%	96%	49%	93%	100%	**73%**
South Pointe Neighborhood from South Pointe Drive to SR A1A/5th Street and from SR 907/Alton Road to Ocean Drive	85%	-	73%	75%	80%	84%	**80%**
Average Parking Demand by Facility Type	**86%**	**73%**	**90%**	**69%**	**87%**	**87%**	

Note: Maximum observed occupancy may have occurred on a weekday or Saturday at either 12:00 PM, 6:00 PM, or 10:00 PM

Table 11: Existing North Beach Parking Supply (2014 South Beach Walker Parking Demand Analysis)

North Beach Areas	Amount of Parking Spaces						
	On-Street	Off-Street					Total
		City-Owned Garages	City-Owned Surface Lots	Privately-Owned Public Garages	Privately-Owned Public Surface Lots	Private Parking	
Town Center from SR 907/63rd Street to 72nd Street, up Abbott Avenue to 73rd Street, up SR A1A/Collins Avenue to 75th Street and from Bonita Drive to Atlantic Way	758	0	676	428	11	7,944	**9,817**
North Shore from the upper limits of the Town Center area to the City boundary with Surfside and from Tatum Waterway Drive/ Byron Avenue to Atlantic Way	2,210	0	518	0	0	3,196	**5,924**
Biscayne Beach from Hawthorne Avenue to Crespi Boulevard and from 77th Street to 86th Street	779	0	0	0	0	314	**1,093**
Normandy Shores along S Shore Drive from N Shore Drive to Ray Street	167	0	0	0	0	234	**401**
Normandy Isle The area encompassed by Bay Drive, Calais Drive, and Marseille Drive	1,764	0	73	0	0	1,787	**3,624**
Total Parking Spaces Supplied by Facility Type	**5,678**	**0**	**1,267**	**428**	**11**	**13,475**	**20,859**

Note: The City does not own or operate any garages within the North Beach region

Table 12: Existing North Beach Parking Demand (2014 South Beach Walker Parking Demand Analysis)

North Beach Areas	Maximum Observed Occupancy						
	On-Street	Off-Street					Total
		City-Owned Garages	City-Owned Surface Lots	Privately-Owned Public Garages	Privately-Owned Public Surface Lots	Private Parking	
Town Center from SR 907/63rd Street to 72nd Street, up Abbott Avenue to 73rd Street, up SR A1A/Collins Avenue to 75th Street and from Bonita Drive to Atlantic Way	94%	-	84%	36%	91%	93%	**90%**
North Shore from the upper limits of the Town Center area to the City boundary with Surfside and from Tatum Waterway Drive/ Byron Avenue to Atlantic Way	92%	-	64%	-	-	55%	**69%**
Biscayne Beach from Hawthorne Avenue to Crespi Boulevard and from 77th Street to 86th Street	79%	-	-	-	-	67%	**75%**
Normandy Shores along S Shore Drive from N Shore Drive to Ray Street	84%	-	-	-	-	98%	**92%**
Normandy Isle The area encompassed by Bay Drive, Calais Drive, and Marseille Drive	89%	-	62%	-	-	69%	**76%**
Average Parking Demand by Facility Type	**88%**	**-**	**70%**	**36%**	**91%**	**76%**	

Note: Maximum observed occupancy may have occurred on a weekday at 11:00 AM, 2:00 PM, or 7:00 PM or Saturday at either 12:00 PM, 4:00 PM, or 9:00 PM

Table 13: South Beach City-Owned Off-Street Parking Facilities

Type of Facility	ID	Location	Spaces
Surface Lot	P1	South Pointe Park	215
	P2	South Pointe Drive & Ocean Drive	62
	P3	Washington & Commerce	12
	P4	1 Street & Washington Avenue	30
	P5	4 Street & Alton Road	23
	P9	11 Street & Jefferson Avenue	120
	P10	15 Street & Michigan Ave (Softball	134
	P11	6 Street & Meridian Avenue	25
	P12	9 Street & Washington Avenue	24
	P13	10 Street & Washington Avenue	30
	P14	6 Street & Collins Avenue	34
	P15	10 Street & Collins Avenue	33
	P16	13 Street & Collins Avenue - West	55
	P18	Lincoln Lane S & Meridian Avenue	40
	P19	Lincoln Lane S & Jefferson Avenue - East Side	21
	P20	Lincoln Lane S & Jefferson Avenue - West Side	62
	P21	Lincoln Lane S & Michigan Avenue	19
	P22	Lincoln Lane S & Lenox Avenue	18
	P23	16 Street & West Avenue	31
	P24	17 Street & West Avenue (Epicure)	71
	P25	Lincoln Lane N & Lenox Avenue -	86
	P26	Lincoln Lane N & Lenox Avenue -	107
	P27	Lincoln Lane N & Meridian Avenue	144
	P28	Lincoln Lane N & Pennsylvania	195
	P29	17 Street & Convention Center Drive	160
	P32	18 Street & Meridian Avenue	886
	P33	19 Street & Meridian Avenue	26
	P46	18 Street & Purdy Avenue	41
	P48	21 Street & Park Avenue	15
	P49	21 Street & Collins Avenue	202
	P51	23 Street & Liberty Avenue - East	20
	P52	23 Street & Liberty Avenue - West Side	35
Garage	G1	7 Street & Collins Avenue	646
	G2	12 Street & Drexel Avenue	134
	G3	13 Street & Collins Avenue	286
	G4	16 Street & Collins Avenue	803
	G5	17 Street & Pennsylvania Avenue	1460
	G7	City Hall (18 Street & Meridian)	650
	G8	5 Street & Alton Road	500
	G9	Pennsylvania Avenue (17 Street)	550
	G10	19 Street & Bay Road	431

Table 14: Middle Beach City-Owned Off-Street Parking Facilities

Type of Facility	ID	Location	Spaces
Surface Lot	P55	27 Street & Collins Avenue	121
	P56	34 Street & Collins Avenue	62
	P57	35 Street & Collins Avenue	72
	P58	40 Street & Royal Palm Avenue	43
	P59	40 Street & Prairie Avenue	70
	P60	40 Street & Chase Avenue	80
	P61	41 Street & Alton Road	41
	P62	42 Street & Jefferson Avenue	30
	P63	42 Street & Royal Palm Avenue	194
	P64	47 Street & Pine Tree Drive	17
	P71	46 Street & Collins Avenue	426
	P72	53 Street & Collins Avenue	159
Garage	G6	42 Street & Sheridan Avenue	620

Table 15: North Beach City-Owned Off-Street Parking Facilities

Type of Facility	ID	Location	Spaces
Surface Lot	P81	64 Street & Collins Avenue	65
	P82	65 Street & Indian Creek (Marina)	52
	P83	69 Street & Harding Avenue - East Side	35
	P80	71 Street & Byron Avenue	30
	P84	71 Street & Harding Avenue- West Side	51
	P85	71 Street & Carlyle Avenue - South Side	15
	P86	71 Street & Bonita Drive - South Side	34
	P87	71 Street & Bay Drive - South Side	35
	P88	Normandy Drive & Rue Versailles	23
	P89	Normandy Drive & Bay Drive - North Side	31
	P90	71 Street & Bonita Drive - North Side	18
	P91	72 Street & Carlyle Avenue	51
	P92	72 Street & Collins Avenue	320
	P93	73 Street & Dickens Avenue	18
	P106	75 Street & Collins Avenue	110
	P107	79 Street & Collins Avenue	47
	P108	80 Street & Collins Avenue	54
	P109	83 Street & Collins Avenue	105
	P110	85 Street & Abbott Avenue	12
	P111	84 Street & Collins Avenue	65
	P112	87 Street & Collins Avenue	15

Table 16: City-Owned Off-Street Parking Facilities Summary

Region Total	Parking Facilities	By Type of Facility	Parking Spaces
South Beach	41	32 Surface Lots & 9 Parking Garages	5495
Middle Beach	13	12 Surface Lots & 1 Parking Garage	1935
North Beach	21	21 Surface Lots & 0 Parking Garages	1186
City-Wide Total	**75**	**65 Surface Lots & 10 Parking Garages**	**8616**

The City owns a total of 10 parking garages and 65 parking surface lots with 6,080 and 2,536 parking spaces, respectively. Garages and surface lots are off-street parking facilities which have advantages and disadvantages as compared to on-street parking. As mentioned previously, parking is a context sensitive/land-use dependent investment, where a specific land-use requires a certain amount of parking spaces and a user's willingness to park changes per the environmental context of where the parking space is located. A parking garage concentrates multiple parking spaces into one location allowing for appropriate parking supply within a small footprint. Notice that out of the TOTAL 8616 OFF-STREET PARKING SPACES provided by the City, 70% ARE PROVIDED WITHIN TEN (10) GARAGES.

Figure 17: Existing City-Wide Off-Street Parking Facilities

FREIGHT

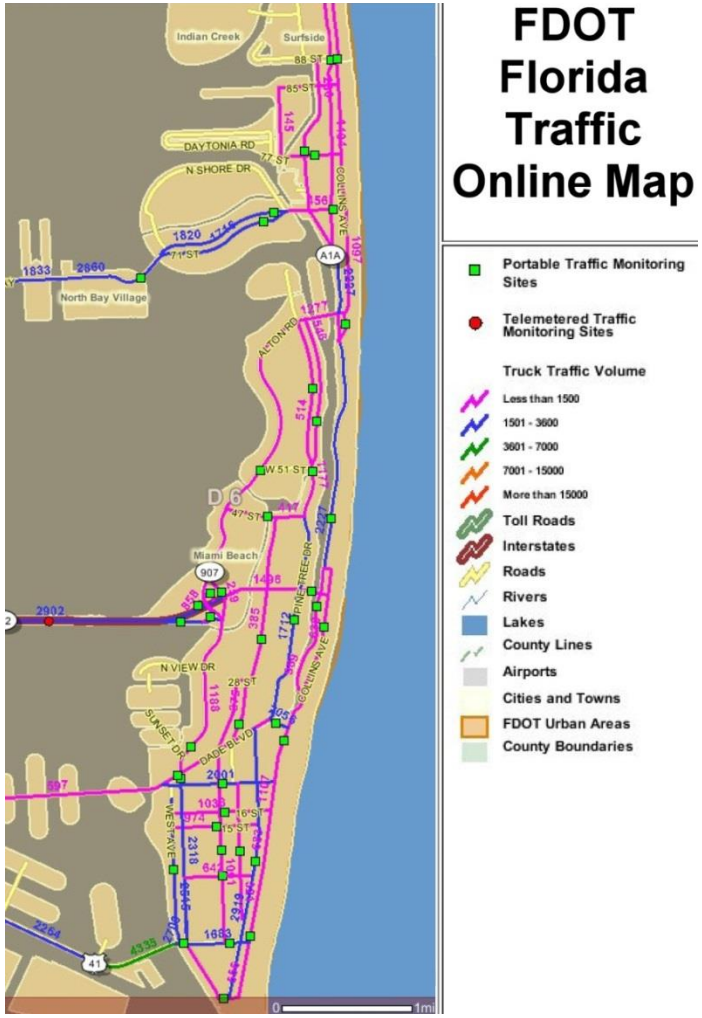


Figure 18: Existing Citywide Truck Volumes

Figure 19: SR 195/Julia Tuttle Causeway SIS Corridor

Existing Loading Zones

Most of the loading zones throughout the City follow the County's Code for curb loading zones which allows for significant flexibility in the types of vehicles that could use these zones and which are enforced from 7:00 AM to 6:00 PM. Under the Count's Code, the stops for loading and unloading activities are restricted to twenty (20) minutes except in specially marked "parcel truck" loading zones where the activity may last up to one (1) hour.

In an effort to improve the efficiency of the loading zones, the City began the Freight and Alley Loading Zones Parking Permit Program on July 1st, 2014, with the purpose of facilitating loading/unloading activities of larger trucks. This current program was developed through the analysis of loading zone regulations in nine (9) other cities throughout the United States which included Chicago, Houston, New York, Orlando, Pensacola, Portland (Oregon), Salt Lake City, San Jose, and Seattle. Taking into account the adjustments and expansions of this program that occurred on February 10, 2015, this TMP aims to review the existing freight and alley loading zone program and delivery management policies to understand the overall existing transportation network.

As defined in the City's Ordinance No. 2014-3873, Freight Loading Zones (FLZ) are on-street parking spaces exclusively reserved for commercial motor vehicles with a gross vehicle weight (GVW) greater than 10,000 lbs., designed to transport more than 15 passengers, and/or is used in the transportation of hazardous materials during specific hours of operation. In order for a commercial motor vehicle to be able to use a FLZ it must be registered and permitted at the City's Service Center. Frequent FLZ users may purchase an annual or semi-annual permit with costs of $364 or $182, respectively; while infrequent users may simply pay for parking at pay stations via the ParkMobile application each time they park. A fleet permit for up to five (5) vehicles may also be purchased by permit holders with fleet(s) over ten (10) vehicles at an annual cost of $1,500 or semi-annual cost of $750. All permits are non-transferable between vehicles or permit holders, however, for every five (5) non-transferable fleet permits; one (1) is a transferable permit that may be used on other qualifying vehicles within the same fleet.

FLZ comprise up to FOUR (4) CONTIGUOUS PARKING SPACES, typically totaling 110 feet in length, with two (2) additional honored parking spaces when the provided four (4) parking spaces are occupied (the two (2) honored parking spaces are free of charge during the hours of operation of the FLZ for commercial motor vehicles). DELIVERIES are prohibited from 8:00 PM to 7:00 AM on most FLZ and ARE LIMITED TO 30 MINUTES. Since February 10, 2015 FLZ may be classified into six (6) different "types" which are as follows:

FLZ 1: 7:00 AM to 6:00 PM [11 hours]

FLZ 2: 7:00 AM to 1:00 PM [6 hours]

FLZ 3: 7:00 AM to 3:00 PM [8 hours]

FLZ 4: 7:00 AM to 11:00 AM [4 hours]

FLZ 5: 7:00 AM to 3:00 PM and 8:00 PM to 10:00 PM [10 hours]

FLZ 6: 7:00 AM to 1:00 PM and 8:00 PM to 10:00 PM [8 hours]

Within the same ordinance, Alley Loading Zones (ALZ) are defined as designated City owned alleyways with sufficient right-of-way (ROW) for loading, unloading, and parking for all other commercial vehicles that do not qualify as commercial motor vehicles (as previously described). Commercial vehicles wanting to use ALZ will also have to be registered and permitted by the City. Annual permit fees cost $182.00 for each vehicle while semi-annual permit fees cost $91.00. Fleet permits may also be purchased for permit holders with ten (10) or more vehicles at fees of $750 or $375 per vehicle for an annual or semi-annual basis, respectively. ALZ may usually be found on alleyways estimated to be less than or equal to 300 feet (which would accommodate approximately 13 parking spaces) without pavement markings or defined parking spaces. DELIVERIES ON ALZ may only be performed from 7:00 AM to 8:00 PM for a MAXIMUM OF 20 MINUTES; hence, ALZ may only be classified into one (1) "type" as follows:

ALZ: 7:00 AM to 8:00 PM [13 hours]

The City's 2015 Freight Loading Zone (FLZ) Adjustments/Expansion Letter to Commission (No. 059-2015) includes four (4) maps that depict the existing FLZ and ALZ in South Beach. These maps are displayed on ***Figures 21 through 24***. The zones are located around four (4) critical north-south roadways: West Avenue, Alton Road, Washington Avenue, and Collins Avenue (Collins Park); and Lincoln Road. **Table 17** includes an inventory of the existing amount of FLZ and ALZ within South Beach as well as the number of public parking spaces they occupy.

Table 17: Existing FLZs and ALZs Inventory

FLZ[A]	Total Existing Zones	78
	Total Occupied On-Street Parking Spaces	341
	Total Zones within Main Roadways	16
	Total Occupied On-Street Parking Spaces within Main Roadways	58
ALZ[A]	Total Existing Zones	24
	Approximate Equivalent Occupied Parking Spaces	387[B]

[A] Excluding Middle and North Beach FLZ
[B] Assuming parallel on-street parking spaces of 22 feet in length

Existing FLZ and ALZ have only been established on South Beach and many commercial and transient residencies (hotels, motels, etc.) outside of South Beach do not benefit from the new loading zone policies. The City is currently undertaking the task to examine existing curb loading zones on North and Middle Beach, which currently follow Miami-Dade County's loading zone policies, in order to upgrade or reclassify them as either FLZ or ALZ.

Figures 25 through 27 illustrate all the loading zones within the three regions of the City, including previously established curb loading zones and future FLZs/ALZs. ***Table 18*** includes an inventory, per region, of the total amount of commercial loading zones still enforced within the City. These curb loading zones usually constitute of one or two parking spaces within a parking lane.

Table 18: Existing Curb Loading Zones Inventory

South Beach	73
Middle Beach	22
North Beach	25

Figure 20: Sample FLZ and ALZ Posted Regulations

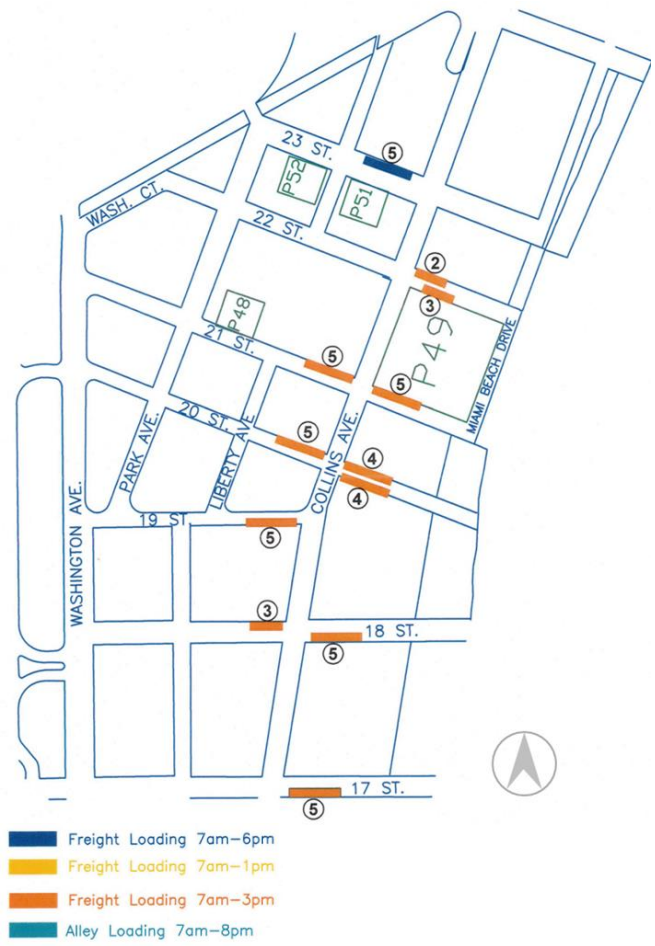


Figure 21: Existing FLZ and ALZ along Collins Avenue

Figure 22: Existing FLZ and ALZ along Washington Avenue

Figure 23: Existing FLZ and ALZ along Alton Road and West Avenue

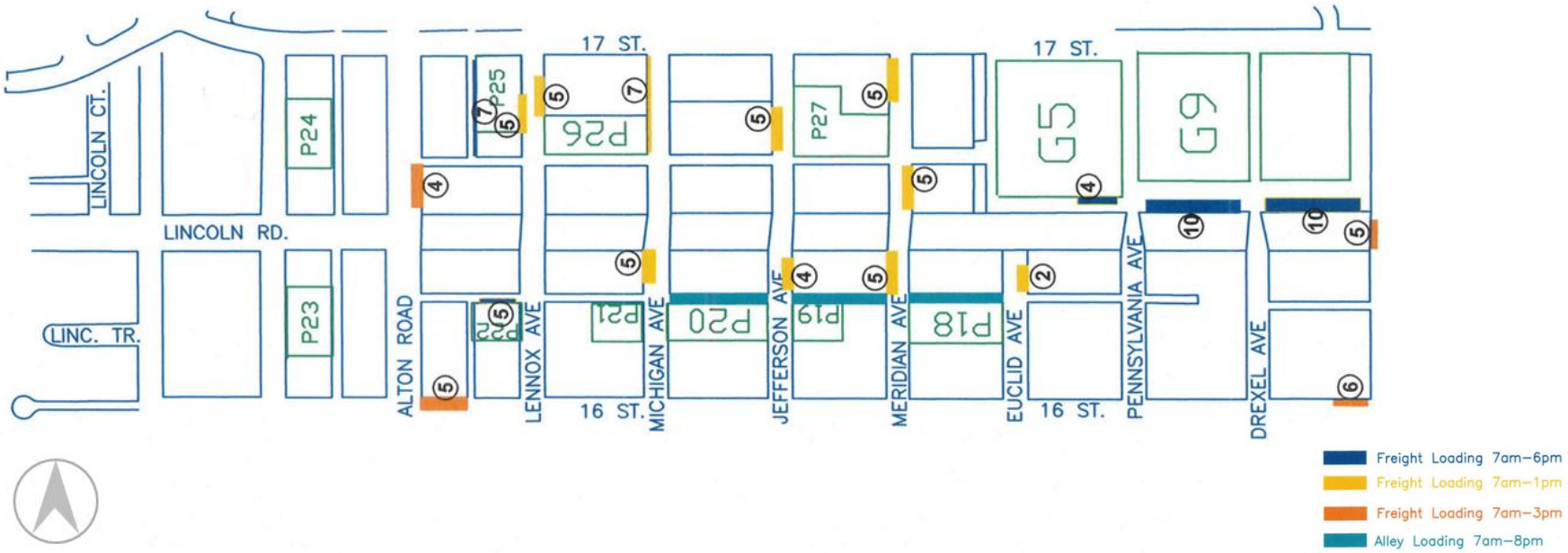


Figure 24: Existing FLZ and ALZ along Lincoln Road

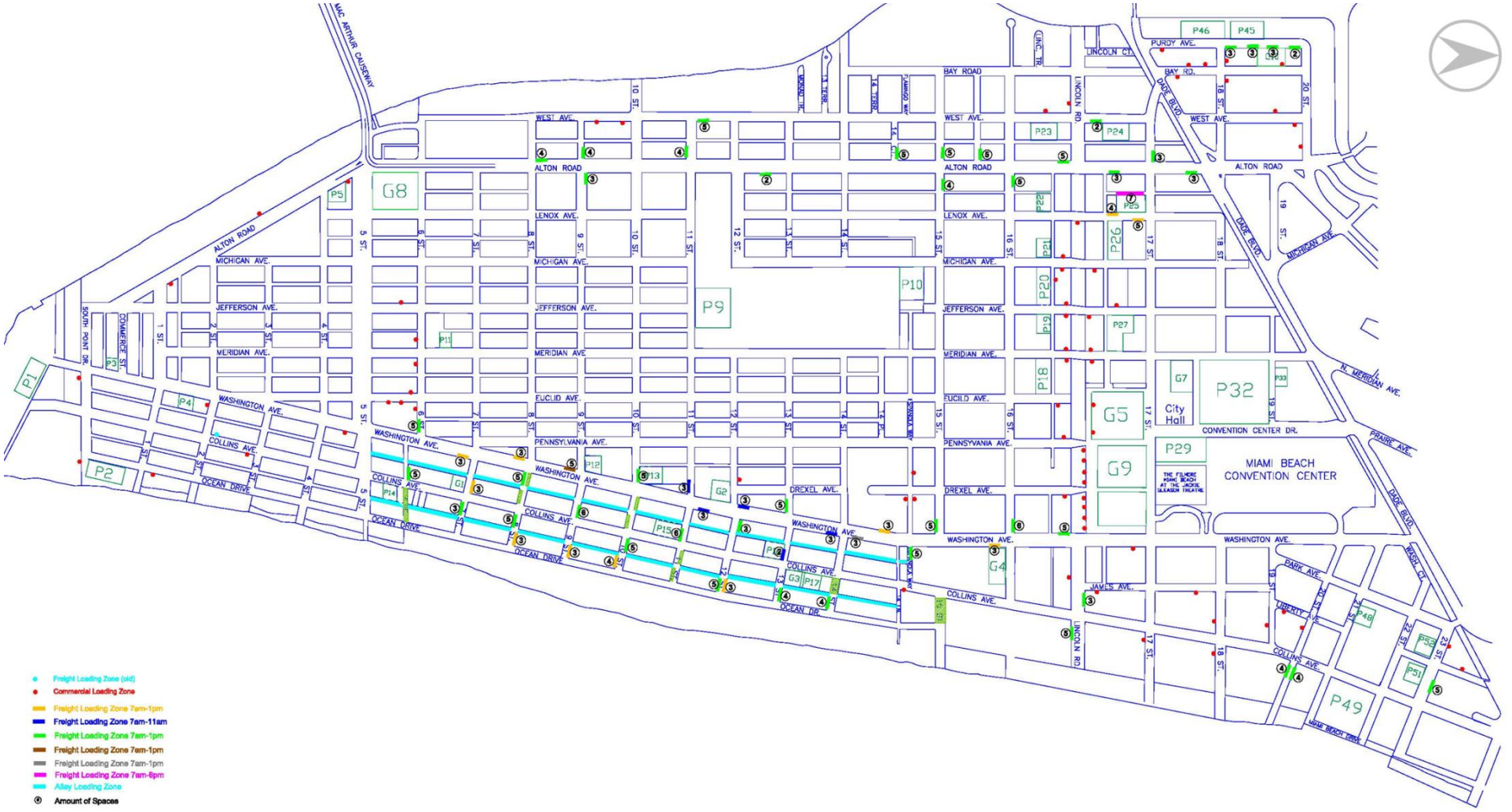


Figure 25: Existing Loading Zones on South Beach

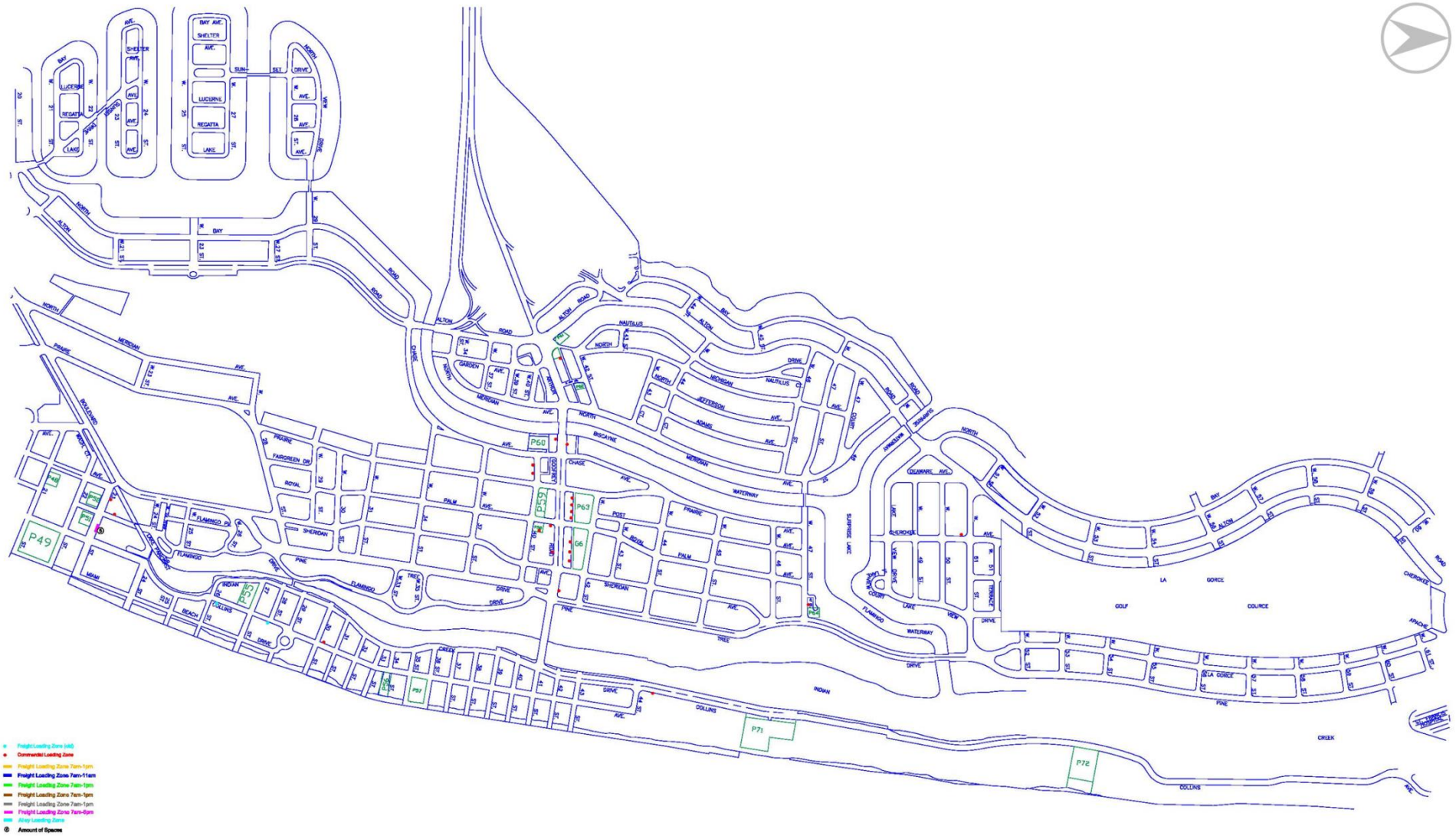


Figure 26: Existing Loading Zones on Middle Beach

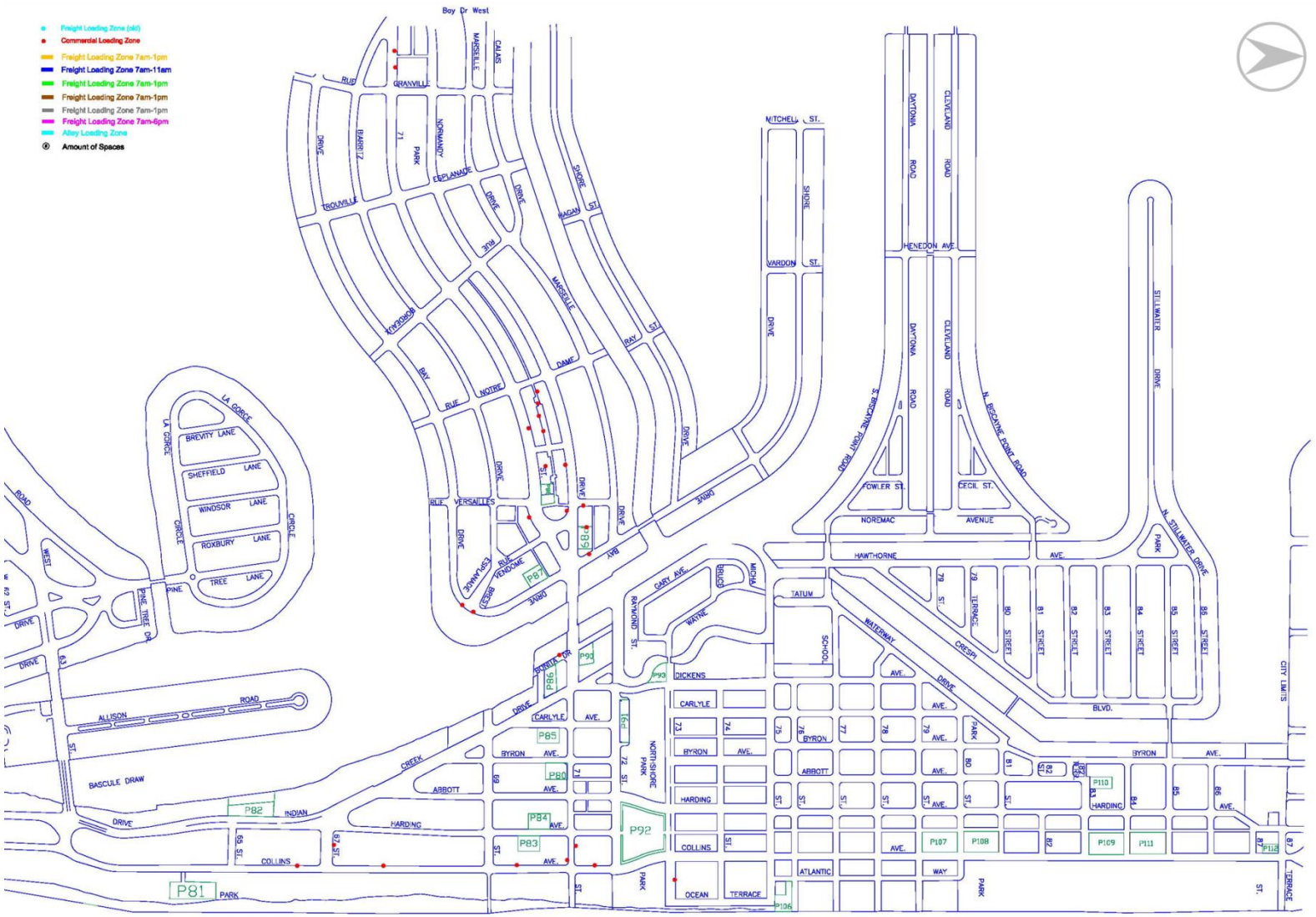


Figure 27: Existing Loading Zones on North Beach

The MOVEMENT OF FREIGHT throughout the City, and the daily delivery of goods, needs to LINK STRONGLY TO the environment surrounding the roadways. The 7.7 square miles of City land predominately consist of residential LAND USE. However, freight movement is mostly needed by commercial, office/governmental, and transient residential (hotels, motels, etc.) land uses. These commercial and transit residential land uses compose about 3.5% and 3%, respectively, of all of the developed land within the City; with 325 upcoming developments as of the year 2015. As shown on ***Figure 28***, most of the commercial land use within the City is concentrated in South Beach. The transient residential properties however, are spread from south to north throughout the eastern coast of the City, as portrayed on ***Figure 29***. With most of the FREIGHT ENTERING THE CITY through the major causeways ON THE WEST, especially along I-195/Julia Tuttle Causeway which is part of the FDOT Strategic Intermodal System (SIS), it is crucial to provide GOOD MOBILITY AND ACCESSIBILITY for these goods to efficiently reach their destinations and exit the City with the LEAST IMPACTS TO THE TRANSPORTATION NETWORK.

Figure 28: Existing Commercial Land Use within City

Figure 29: Existing Transient Residential Land Use within City

TRANSPORTATION POLICIES

The City of Miami Beach currently has **OUTSTANDING TRANSPORTATION POLICIES** that encourage the development of a sustainable, efficient, and attractive transportation system. **POLICIES ARE** consciously and carefully crafted **SYSTEMS OF PRINCIPLES** that help guide decisions and decision makers to achieve desired goals and milestones. Through adopting transportation policies, it is the **CITY'S GOAL** to provide, maintain, and improve a **SUSTAINABLE, SAFE, CONVENIENT, AND ENERGY EFFICIENT MULTI-MODAL TRANSPORTATION SYSTEM.** Multi-modal transportation systems are characterized by having several modes of transportation actively being used by citizens in order to **TAKE ADVANTAGE OF THE UNIQUE BENEFITS INHERENT TO DISTINCT MODES OF TRANSPORTATION**. Recognizing the benefits of a complete multi-modal transportation system the City updated the Transportation Element of its 2025 Comprehensive Master Plan on November 2009 in order to provide the current outstanding transportation policies. This TMP aims at reviewing the existing policies in order to reiterate positive solutions to current needs and as a measure of ensuring transportation challenges are resolved.

Transportation Element

The City's current Transportation Element is focused on the mobility of people and goods, not merely vehicles. Coordinated with the City's Land Use Element, the Transportation Element recognizes and promotes alternative modes of transportation including public transit, bicycle, and pedestrians as well as acknowledging the need for parking and freight sustainability. By balancing the City's current and future needs, the different policies found within this element ensure the economic vitality of businesses within Miami Beach, enhances the quality of life of the City's residents, and employs environmentally friendly growth management principles. The eleven (11) objectives under which policies have been adopted within the current Transportation Element are summarized below. For detailed policy descriptions please refer to the Transportation Element within the 2025 Comprehensive Master Plan.

1. **LEVEL OF SERVICE**
   The City shall provide a safe, convenient, balanced, efficient, and effective multi-modal transportation system with a Level of Service (LOS) for multiple transportation modes.

2. **COORDINATE WITH LAND USE**
   The City shall evaluate its transportation system as it relates to the land use element of this comprehensive plan in an effort to encourage commercial development which is mixed use, multi-modal in nature and which ultimately enhances mobility.

3. **ROADWAY PLANNING, DESIGN, AND CONSTRUCTION**
   The City shall continue to provide for a safe, convenient, efficient, and effective transportation system, which sustains the City's natural, aesthetics, social, and economic resources.

4. **MASS TRANSIT**
   The City shall work with transportation partners, specifically Miami-Dade Transit (MDT), to provide residents and visitors with an efficient public mass transportation system.

5. **PEDESTRIAN AND BICYCLE CIRCULATION**
   The City shall strive to increase and promote the safe and convenient use of its bicycle and pedestrian networks including the creation, extension, and improvements of bicycle and

pedestrian facilities between and among present and potential major generators of bicycle and pedestrian traffic.

6. MULTI-MODAL TRANSPORTATION

The City shall continue to support and promote multiple modes of transportation by considering Transportation Demand Management (TDM), Transportation Systems Management (TSM), and other techniques.

7. ENHANCE, PROTECT, AND PRESERVE THE CITY'S NEIGHBORHOODS

The City shall provide a safe and attractive transportation system throughout the City that meets the needs of the users of the rights-of-way, the neighborhoods, the neighboring communities, and the environment.

8. PARKING

The City shall provide clean, safe, and affordable parking, by continuing to explore and implement creative and technologically advanced methods of parking provisions and management to satisfy the need.

9. TRANSPORTATION CONCURRENCY MANAGEMENT AREAS (TCMA)

The City shall maintain the South Beach, Middle Beach, and North Beach Transportation Concurrency Management Areas (TCMAs) within its boundaries. Within these areas, increased multi-modal mobility options will be pursued and redevelopment efforts will be focused.

10. TRANSPORTATION COORDINATION WITH OTHER JURISDICTIONS

Transportation efforts in the City will be coordinated with the plans and programs of other state and local jurisdictions including; the Miami-Dade Metropolitan Planning Organization (MPO), the Florida Department of Transportation (FDOT), Miami-Dade County Public Works (MDCPW), MDT, and other local jurisdictions.

11. HURRICANE EVACUATION

The City shall address hurricane evacuation within its jurisdiction by coordinating with responsible agencies including the Florida Department of Community Affairs, Miami-Dade County Office of Emergency Management, South Florida Regional Planning Council, and MDT.

Concurrency Management

Out of the eleven (11) objectives described within the City's Transportation Element, a critical objective for developing a truly efficient and multi-modal transportation system is the successful implementation of TMCAs (*Objective 9*). Concurrency measures the rate of transportation infrastructure development relative to the rate of land use development. It is essentially a measure of how much transportation capacity is supplied through the roadway network infrastructure versus how much capacity is demanded by the land development; A CONCURRENCY SYSTEM HELPS state governments and municipalities to SUSTAIN TRANSPORTATION NETWORKS that are developed ahead of or CONCURRENT WITH THE DEVELOPMENT OF ITS SURROUNDING LAND.

The State of Florida's transportation concurrency requirements ensure that local governments provide proper consideration to state resources and facilities as well as local ones. These requirements establish that local governments define Level of Service (LOS) thresholds for the transportation network, to determine whether new developments can be accommodated by the existing and planned roadway infrastructure.

Concurrency became a requirement by the State of Florida through its 1985 Growth Management Act and since then it has evolved to promote, and better accommodate, growth in urban areas where the option of widening roadways is very constrained. The Act was revised various times to become more flexible and provide concurrency alternatives for local governments with additions like transportation concurrency management areas and multi-modal transportation districts. In 2011, the Community Planning Act made transportation concurrency optional for local governments[1]. The City of Miami Beach currently opts for retaining its Concurrency Management System, created in 1998.

The City's process for managing transportation concurrency is defined in the Transportation Element of the 2025 Comprehensive Master Plan and Chapter 122 of the City's Municipal Code. The sole purpose of the process is to ensure that any land development project having the potential to increase the demand for roadway facilities within the City will be adequately served in accordance with the establishes levels of service (LOS).

Within its Transportation Element, the City has established minimum levels of service criteria, stating that ALL ROADS WITHIN THE CITY SHALL APPLY TO THE FOLLOWING LEVEL OF SERVICE STANDARDS, except Federal Interstate Highway System (FIHS), Strategic Intermodal System (SIS), and Transportation Regional Incentive Program (TRIP), which shall be subject to Florida Department of Transportation (FDOT) level of service standards.

- Local Roads: **LOS - D**
- Collector Roads: **LOS - D**
- Arterial Roads: **LOS - D**
- Limited Access Roads: **LOS - D**

Additionally, the City has established TCMAs, which, as defined by the FDOT, are compact geographic areas with an existing network of roads where multiple, viable alternative travel paths or modes are available for common trips that local governments may establish to promote infill development and redevelopment.

The Transportation Element dictates that for roadways within these established TCMAs and for roadways exhibiting certain of the following characteristics, the following criteria will have to be adhered to:

- Where NO MASS TRANSIT service exists, roadways shall operate at **LOS D or above**.
- Where MASS TRANSIT service having HEADWAYS OF 20 MINUTES OR LESS is provided within 1/4 mile distance, parallel roadways shall operate at **no greater than 120% of LOS D.**
- Where EXTRAORDINARY TRANSIT service classified as Local Circulator or express or peak-hour limited stop bus service having HEADWAYS OF 10 MINUTES exists, parallel roadways within 1/4 mile shall operate at **no greater than 150% of LOS D**.

As per the Transportation Element, the City's TCMAs are portrayed on ***Figure 30***. These are the areas defined by the City where the focus should be redevelopment efforts and where increased multi-modal mobility options should be pursued. Furthermore, Policy 9.1 of the Element provides tables with specific limits for certain roadways within the TMCAs of South Beach, Middle Beach, and North Beach which will have their service volumes averaged at the approved LOS levels, as the calculation of area-wide capacity.

Lastly, Policy 9.8 of the Transportation Element dictates that all MAJOR DEVELOPMENTS within the City's TCMAs shall submit a Transportation Mitigation Plan which will include STRATEGIES TO MITIGATE THE TRAFFIC GENERATED BY THE SITE, and will encourage the use of alternative modes of transportation.

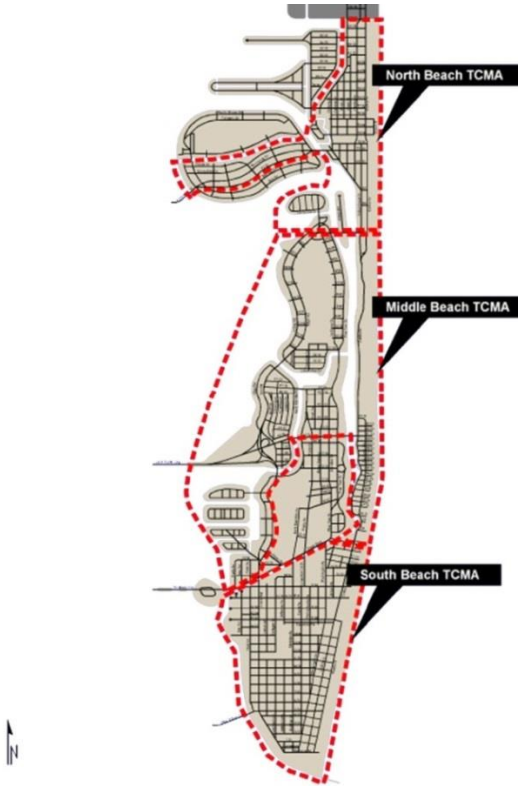


Figure 30: City Transportation Currency Management Areas (TCMAs)

By creating these three sub-sections, the City is able to manage and allocated collected mitigation fees to the respective area in an efficient manner that allows for different area-wide level of service standards and funding for context-sensitive solutions. The concurrency fees currently charged within each of the three TCMAs are shown on **Table 19**.

Table 19: Existing City TCMAs Concurrency Fees

TCMAs	MITIGATION FEES
South Beach	$2,016 per Vehicular Trip
Middle Beach	$2,783 per Vehicular Trip
North Beach	$1,841 per Vehicular Trip

While the existing defined TCMAs span throughout the vast majority of the City limits, and while the current Concurrency Management Plan proposes to educate the development community to encourage appropriate TSM and TDM strategies that improve the mobility system's efficiency, effectiveness, and safety; it is not realizing its intended purpose to its full potential because of one particular reason:

- According to Policy 9.8, only new major developments (those projects over 50,000 gross sq. ft. and/or projects that increase the number of trips over 100 peak hour trips) are required to submit a Transportation Mitigation Plan, which is a TRAFFIC IMPACT STUDY that includes proposed strategies to mitigate the traffic generated by the site and encourage the use of alternative modes of transportation.

This simply means that the impacts from any proposed developments with a gross area smaller than 50,000 sq. ft. are not measured until culminating stages of the development process or even worse, go unaccounted for.

The mitigation fees shown on **Table 19** are used by the City to implement specific roadway or geometric improvements in the general area of the proposed development to maintain appropriate service levels. As per the City's adopted LOS and capacity standards, 10 roadway segments currently exhibit unacceptable LOS (i.e. LOS E or F), six (6) of which have no remaining capacity; and as per forecasted volumes in the Automobiles section of this TMP, the number of segments with unacceptable LOS will increase to 15. With only 10 major corridors within the City, this indicates that most, if not all, of the City's major roadways are or will be operating at vehicular capacity or above. It is no coincidence that these roadway segments are major arterials or collectors such as Alton Road, which are usually the roadways which carry the most traffic.

Mitigation fees must serve not only to provide for roadway capacity improvements but also to provide for alternative multi-modal improvements; and more importantly, they should apply to most, if not all, proposed developments or redevelopments within the City's TCMAs.

The reality of MITIGATION FEES is that they PROVIDED A DUAL BENEFIT for the City:

1. They require a traffic impact study to be performed which identifies critical intersections and transportation capacity issues consequently allowing for constant updates of the available transportation network data, and
2. They increase the monetary capacity of the City to implement necessary improvements on the identified impacted locations.

However, there may be a case in which the City already has identified capacity issues through other transportation efforts and instead needs monetary backup to implement proposed improvements for said issues in a timely manner. Since traffic impact studies and mitigation fees are codependent and require time to be assessed and completed, it may be more beneficial for the City to provide other methods of complying with transportation concurrency.

Multi-Modal Concurrency

The City is currently taking steps toward the reevaluation of their current methodology that developments have to follow when required to

perform a Neighborhood Traffic Impact Study. To evaluate the effectiveness of current concurrency fees and how they are invested in mitigation improvements, the City may evaluate its Concurrency Management System according to the Miami-Dade Metropolitan Planning Organization's (MPO) Evaluation of Current Methodology to Determine Traffic Concurrency study published in February 2013. In this document, the MPO presents alternative approaches to the existing concurrency programs and impact fee structures within Miami-Dade County in order to that take into consideration multi-modal transportation options and different land use patterns based on density and intensity. Because the CURRENT CONCURRENCY METHODOLOGY FOCUSES ON DETERMINING TRAFFIC IMPACTS on the nearest roadway(s) of a subject development/redevelopment and how it is accessed instead of focusing on a more comprehensive review of the overall transportation network and how that development affects it, incentives to provided transit-oriented developments, multi-modal developments, or develop Urban Infill Areas (UIA) are not effective. Therefore the MPO suggests a MORE COMPREHENSIVE PERFORMANCE MEASURE denominated "PERSON-TRIPS" as opposed to the traditional vehicular trips considered by traffic impact studies. Person-trips take into consideration the person-capacity of roadways, meaning that it counts how many people a roadway may carry depending on the mode of transportation used. Where an vehicular trip counts a bus trip as a single trip, a person-trip counts a bus trip as several trips considering the bus' headway, seat capacity, and estimated occupancy (e.g. a high frequency transit line usually has 15- minute headways and each bus contains approximately 40 available seats, hence the person- trips per hour would be 40 seats x 4 trips per hour x 2 directions = 320 person-trips per hour). Person trips may also be an appropriate performance measure for determining the amount of pedestrian and bicycle trips created by a development and the capacity of the existing infrastructure. Therefore, evaluating potentially modifying the City's existing concurrency management system to any of the alternatives presented by the MPO may result in a more accurate concurrency system that uses the collected fees for appropriate infrastructure facilities.

Section Sources:

1. FDOT Proportionate Share Calculation Report, 2011
2. FDOT Working with Transportation Concurrency Management Systems, 2006

EXISTING MODE SHARE

According to the latest City of Miami Beach Environmental Scan (CMBES), performed for the period of 2013-2014, after having decreased since the 1980s, the City's residential population has been steadily growing since 2006. As of 2013, the City houses approximately **90,600 RESIDENTS**. While the needs of the residents come first, they are only part of the story, as the City experiences gradually increasing **DAILY POPULATION** numbers reaching around **206,000 INDIVIDUALS**. Along with the portion of the residents who stay to work at the City, the CMBES includes in this daily population non-resident workers, hotel guests, "other" tourists, non-tourist City visitors, and "other" day trippers.

In the year 2009, the Federal Highway Administration (FHWA) carried out a National Household Travel Survey (NHTS) and developed a report summarizing national travel trends. The document states that the average number of daily trips per person is approximately 3.8. When taking into account the 206,000 individuals within the City on any given day, this translates to nearly **782,800 DAILY TRIPS** to, from, and/or within the barrier island. Additionally, in association with all the states, the American Association of State Highway and Transportation Officials (AASHTO) produces special census products and data tabulations for transportation to facilitate the understanding of characteristics regarding where people live and work, their journey to work commuting patterns and the travel modes they use for getting to work[3]. The following mode share data were obtained from these AASHTO planning tools and is pertinent to the modes of transportation City residents use to get to/from work every day (see ***Figure 31***). Additionally, the same data was obtained for the entire Miami-Dade County and for other cities to provide comparative measures for the City's current modal split (see ***Figure 32***).

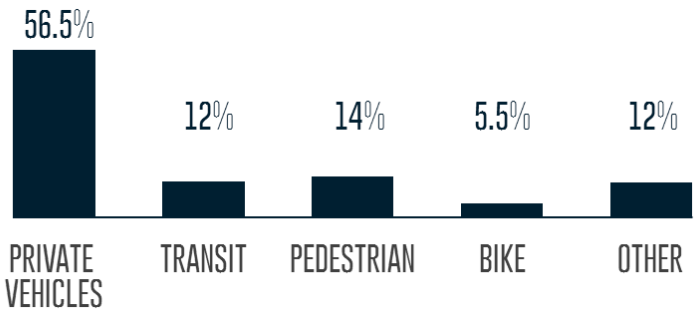


Figure 31: City of Miami Beach Residents Mode to Work

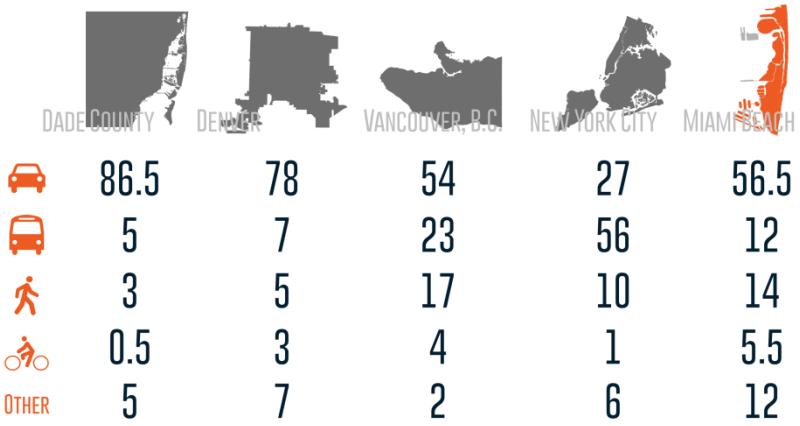


Figure 32: Miami-Dade County and Other Cities Residents Mode to Work

When comparing the City's current percentages to the other cases, while a bit far from the New York City numbers which has been and currently is the first in the country on transit usage, Miami Beach is currently achieving numbers in the vicinity of Vancouver, British Columbia, one of the most multi-modal cities in North America. The magnitude if the City's numbers for "other" should not be a surprise, as this category encompasses mopeds, scooters, motorcycles, taxis, etc.; modes which are widely known to be used throughout Miami Beach.

As previously mentioned, the residential modal split only tells a portion of the story, as TRAVEL TO AND FROM THE WORKPLACE accounts for ONLY 16 PERCENT OF ALL PERSON TRIPS[2]. This means that around 657,552 daily trips need to be placed in the context of mode share to comprehensively assess the traveling characteristics of most, if not all, of the City's daily population.

According to the NHTS, at 42 percent of the total daily trips, the reason why most people travel on a daily basis is for family and personal errands. Second to this, is traveling for social and recreational purposes at 27 percent (see **Table 20**).

Table 20: Total Daily Person Trips by Purpose[1]

TRIP PURPOSE	PERSON TRIPS (MILLIONS)	PERCENT
To/From Work	61,214	16%
Work-Related Business	11,943	3%
Family/Personal Errands	166,535	42%
School or Church	37,676	10%
Social and Recreational	107,722	27%
Other	6,933	2%
Total	**392,023**	**100%**

Family/Personal Errands trips include the following[1]:

Medical/dental services, shopping/errands, buy goods, buy services, buy gas, attend funeral/wedding, use personal services, pet care, attend meeting, family personal business/obligations, pick up someone, take and wait, drop someone off, transport someone.

Social and Recreational trips include the following[1]:

Going to the gym/exercise/play sports, rest or relaxation/vacation, visit friends/relatives, go out/hang out, visit public place, get/eat meal, coffee/ice cream/snacks, meals, social event.

The 2012 American Community Survey Three-Year Estimates show that out of the total residential population, 49,459 ARE CURRENTLY EMPLOYED. Furthermore, the CMBES indicates that out of these employed residents, 28,611 LEAVE THE CITY TO WORK. The CMBES displays the following:

Table 21: City of Miami Beach Average Daily Population by Category

POPULATION CATEGORY	NO. OF PEOPLE	PERCENT
Residents	90,588	44%
Seasonal Residents	23,509	11%
Residents leaving for work	-28,611	-14%
Non-Resident Workers	33,561	16%
Hotel Guests	25,688	12%
Other Tourists	14,191	7%
Non-Tourist Beach Visitors	32,247	16%
Other Day Trippers	14,742	7%
Daily Population	**205,915**	**100%**

The data show that whether, leaving, entering, or staying within the City, there are a total of 83,020 PEOPLE TRAVELING TO GET TO AND FROM WORK EVERY DAY.

Assuming one trip to go to work and another one to return, this translates to approximately 166,040 daily work commuting trips. These trips represent 21 percent of the total daily to, from, and within the City trips and compares closely to the national average of 16 percent.

The following data show the current values for the Annual Average Daily Traffic (AADT) for the six (6) roads that can be used to enter and leave the City to and from the North and the West[4]:

Table 22: Annual Average Daily Traffic (AADT) for Roads Leaving and Entering the City[4]

ROADWAY	AADT (2014)	PERCENT
I-395/SR A1A/MacArthur Causeway	90566	31%
Venetian Causeway	5100	2%
I-195/SR 112/Julia Tuttle Causeway	107473	37%
SR 934/79th Street Causeway	39000	13%
Harding Avenue	26000	9%
SR A1A/Collins Avenue	21500	7%
Total	**289639**	**100%**

The AADT percentage splits show, not surprisingly, that travelers are making their trips to and from the City on the MacArthur Causeway or Julia Tuttle Causeway. Now, AADT data literally translates into all of the vehicles passing through a certain point on the roadway. While these roadways have counts for heavy vehicle volumes (T-factors), these values only reflect vehicles that have longer distances between axles than standard personal automobiles but do not differentiate between a pick-up truck hauling a trailer being driven by one individual and public bus carrying 30 people.

Transit Mode Split

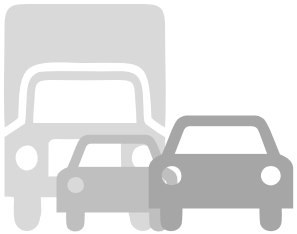
The task was clearly spelled out by the data gathered until this point: TO PLAN FOR BETTER transportation ALTERNATIVES for people accessing, leaving and/or staying within the City, it became CRUCIAL TO KNOW what the EXISTING SPLIT BETWEEN TRANSPORTATION MODES was. Given that transit ridership for the existing routes and their stops was known within the City, data which can be found within the Transit section of this document; the approach was to find how the people were entering and leaving the City on their personal automobile or using public transit. While it is clear that those two are not the only available modes of transportation, it was assumed that pedestrian and bicycle trips would be negligible in comparison when only focusing on trips across the causeways and on the roads entering and leaving the City on the North.

While gathering all of the relevant data from Miami-Dade Transit (MDT) was rather time consuming, the methodology for obtaining the transit mode split on the access roads to and from the City followed a quite simple approach. First, based on the schedules for each of the routes[5], the number of bus trips was calculated for each of the six (6) City access roadways. This number of bus trips was then multiplied by the average load[6] for each of the pertaining routes and thus yielding DAILY TOTALS for the number of PEOPLE CURRENTLY ENTERING (16,825) AND LEAVING (15,730) THE CITY BY BUS. The following table provides a breakdown how these daily totals were obtained and displays percentages for each of the six (6) roadways.

Table 23: Daily Transit Trips to and from City by Roadway

City Access Roadway	MDT Routes	Entering City			Leaving City		
		Daily No. of Bus Trips	Average Bus Load	Person Trips	Daily No. of Bus Trips	Average Bus Load	Person Trips
I-395/SR A1A/MacArthur Causeway	103 - C	51	25	1275	52	26	1352
	119 - S	89	29	2581	94	26	2444
	113 - M	20	13	260	19	15	285
	120	70	32	2240	71	28	1988
Subtotal		**230**		**6356**	**236**		**6069**
Percent		**33%**		**38%**	**34%**		**39%**
Venetian Causeway	101 - A	14	10	140	14	10	140
Subtotal		**14**		**140**	**14**		**140**
Percent		**2%**		**1%**	**2%**		**1%**
I-195/SR 112/Julia Tuttle Causeway	150	35	18	630	37	18	666
	62	63	19	1197	63	19	1197
	110 - J	43	22	946	44	16	704
Subtotal		**141**		**2773**	**144**		**2567**
Percent		**21%**		**16%**	**21%**		**16%**
SR 934/79th Street Causeway	112 - L	88	30	2640	87	21	1827
	79	12	18	216	13	13	169
Subtotal		**100**		**2856**	**100**		**1996**
Percent		**15%**		**17%**	**15%**		**13%**
Harding Avenue	119 - S	94	26	2444	-	-	-
	108 - H	38	17	646	-	-	-
	120	70	23	1610	-	-	-
Subtotal		**202**		**4700**	**0**		**0**
Percent		**29%**		**28%**	**0%**		**0%**
SR A1A/Collins Avenue	119 - S	-	-	-	89	28	2492
	108 - H	-	-	-	38	17	646
	120	-	-	-	70	26	1820
Subtotal		**0**		**0**	**197**		**4958**
Percent		**0%**		**0%**	**29%**		**32%**
Total Directional Daily Trips		**687**		**16825**	**691**		**15730**

The data dictates more people are entering the City than leaving on most of the roadways except for Collins Avenue (See **Table 24**), which is expected since routes 119(S) and 120 travel northbound beyond the City limits and travelers may be using these routes to access neighboring cities from within Miami Beach and from the mainland. Also, being the most crucial link between downtown Miami and the City, it is not surprising that MOST PEOPLE USING TRANSIT TO ACCESS THE CITY OF MIAMI BEACH ARE DOING SO ON THE MACARTHUR CAUSEWAY, with 38 percent of the total person bus trips entering and 39 percent leaving. Now that the total number of person trips on buses was obtained, it was time to compare these values to the total number of person trips (TNPT) entering and leaving the City (See ***Figure 33***). The TNPT was obtained by multiplying the AADT values by the national value for vehicle occupancy; which in theory is a function of both the number of people in a vehicle and the distance traveled on a trip, is weighted based on the purpose of the trip, and averages at approximately 1.6 PERSONS PER VEHICLE[1,7].



ROADWAY	AADT (2014)	TOTAL DAILY BUS TRIPS (2014)	PERSON TRIPS ON PERSONAL AUTOMOBILES	PERSON TRIPS ON BUSES	TRANSIT MODE SPLIT
I-395/SR A1A/MacArthur Causeway	90566	466	144906	12425	**8%**
Venetian Causeway	5100	28	8160	280	**3%**
I-195/SR 112/Julia Tuttle Causeway	107473	285	171957	5340	**3%**
SR 934/79th Street Causeway	39000	200	62400	4852	**7%**
Harding Avenue	26000	202	41600	4700	**10%**
SR A1A/Collins Avenue	21500	197	34400	4958	**13%**
Total	**289639**	**1378**	**463422**	**32555**	**7%**

Table 24: Bi-Directional Transit Mode Split by City Access Roadway

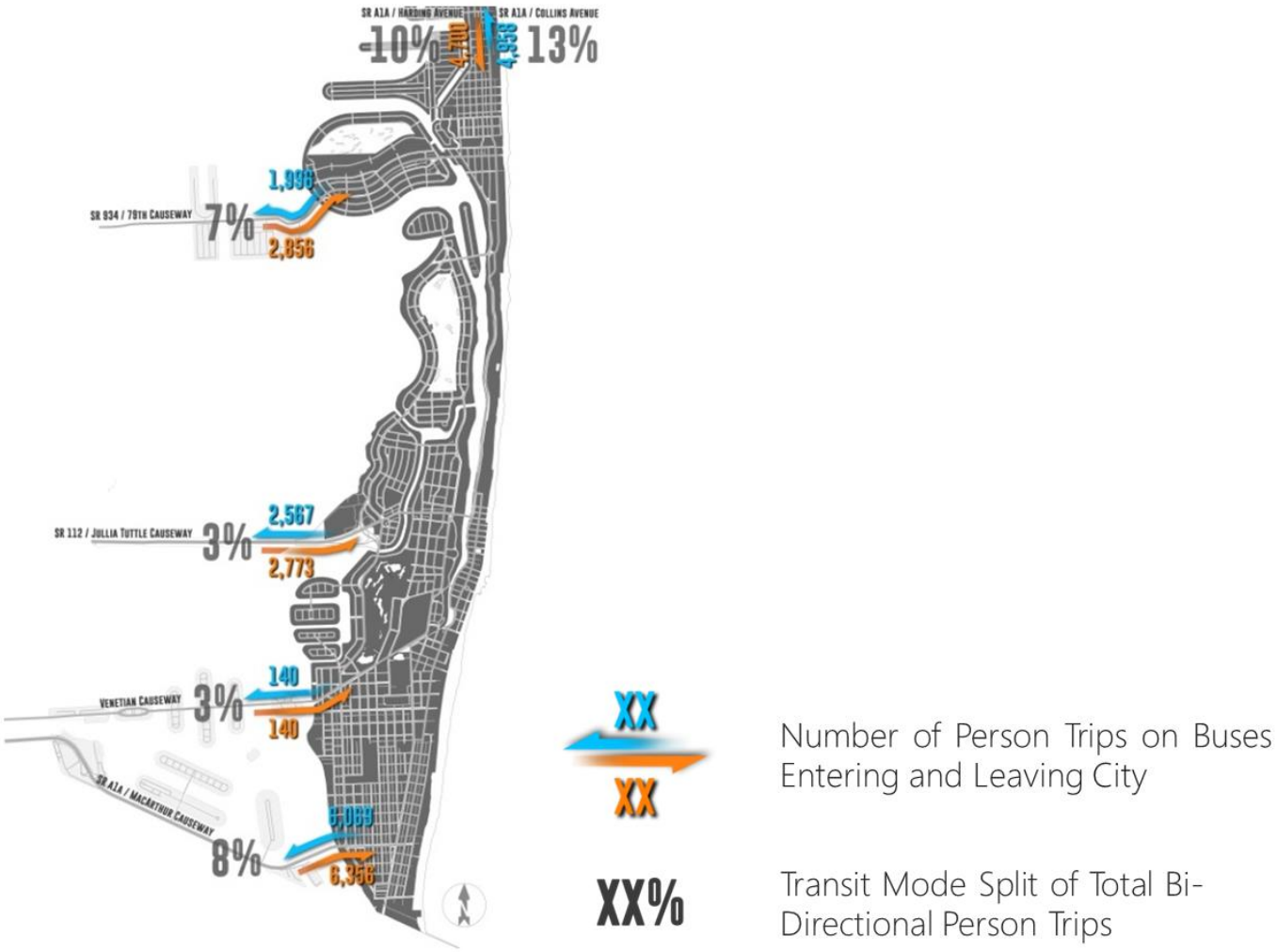


Figure 33: Transit Mode Split by City Access Roadway

In relation to the total number of daily person trips, Collins Avenue exhibits the highest percentage of these trips being performed on transit. As previously mentioned this is expected since Collins Avenue hosts route 119 (S) which can be used to access other neighboring cities to the north and is currently the route within and going through the City with the most ridership. Overall, 7 PERCENT OF ALL DAILY PERSON TRIPS TO AND FROM THE CITY ARE PERFORMED ON BUS. When considering that this includes not only work trips but all trip types, from personal errands to social and recreational, it provides a good starting point to recommend improvements and a to serve as a future measure for the effectiveness of such improvements.

City Visitors Mode Split

Being that a large number of the City's daily population consists of visitors, approximately 42 percent according to the CMBES when considering everyone who is neither a worker nor resident; data were gathered from the Greater Miami Convention and Visitors Bureau (GMCVB) to find out which modes people are using to visit Miami Beach. The data collected pertain to overnight and non-overnight visitors daily trips traveling from Miami International Airport into the City.

At 9 PERCENT for overnight and 12 PERCENT for non-overnight, the City VISITORS' TRANSIT MODE SPLIT compares to that of the residents (12 percent) as well as the overall split from the daily person trips to and from the City (7 percent). Once again, these numbers provide a canvas to recommend better transportation alternatives for those travelers visiting the City on a daily basis.

Table 25: Overnight Visitors Mode of Transportation to the City

Mode Used	Daily Vehicle Trips	Total Daily Person Trips	Mode Split (%)
Car Rental (Avg. 2.2 persons/vehicle)	3351	7372	**44%**
Taxi Cabs (Avg. 1.8 persons/vehicle)	1262	2272	**13%**
Limousines (Avg. 2.2 persons/vehicle)	59	130	**1%**
Airport Flyer (Route 150)	N/A	1504	**9%**
Super Shuttle (Avg. 1.8 persons/vehicle)	93	167	**1%**
Private Vehicle (Avg. 2.2 persons/vehicle)	2447	5383	**32%**
Total	**7212**	**16828**	**100%**

Table 26: Non-Overnight Visitors Mode of Transportation to the City

Mode Used	Daily Vehicle Trips	Total Daily Person Trips	Mode Split (%)
Car Rental (Avg. 2.2 persons/vehicle)	1795	3949	**33%**
Taxi Cabs (Avg. 1.8 persons/vehicle)	1332	2398	**20%**
Limousines (Avg. 2.2 persons/vehicle)	0	0	**0%**
Airport Flyer (Route 150)	N/A	1504	**12%**
Super Shuttle (Avg. 1.8 persons/vehicle)	0	0	**0%**

Private Vehicle (Avg. 2.2 persons/vehicle)	1938	4264	**35%**
Total	**5065**	**12114**	**100%**

ONGOING EFFORTS

Upon completion of a comprehensive data collection effort, observations and assessment of certain citywide travel patterns, and existing and forecasted transportation network analysis, ongoing short, mid and long term improvements to the City's transportation network were identified as a means of understanding the current actions taken to resolve existing transportation issues within the City.

The projects included in the City's Capital Improvement Program, the latest Miami-Dade MPO Long Range Plan, and the MPO's Transportation Improvements Program were reviewed and examined. These projects are portrayed in ***Figures 34*** and ***35***. Aside from these already defined and funded infrastructure improvements, the City has been conducting PARALLEL EFFORTS to this TMP in continuous determination of tackling current transportation needs. These parallel efforts included the City's current Bicycle and Pedestrian Master Plan and Street Design Guides, the Blueways Master Plan, and previously completed Atlantic Greenway Network Master Plan as well as a number of short-term improvements. These short-term improvements efforts are shown on **Table 27**, and are responsibilities of the City's Transportation Department.

Figure 34: City Neighborhood Projects and MPO TIP Projects

CAPACITY TRANSIT BIKE/PED

UPCOMING PROJECTS

MAP ID	PROJECT	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL CAPITAL COST (2013 $)	PROJECT COSTS FUNDED VIA 2040 PLAN	FUNDING YEAR
PRIORITY I							
1	West Avenue Connector Bridge	North of Lincoln Road	South of 18th Street	New bridge construction			TIP and 2020
PRIORITY II							
2	79th Street Causeway (JFK Causeway) Enhanced Bus	Northside Metrorail Station	Miami beach Convention Center	Improve/implement transit service	$55.457	$218.867	2021 - 2025
PARTIALLY FUNDED PROJECTS							
3	Beach Connection (Baylink)	Miami Downtown Terminal	Miami beach Convention Center	Premium transit service	$166.400	$36.378	2026 – Beyond 2040
BICYCLE/PEDESTRIAN PROJECT - PRIORITY I							
4	NE 79th Street	NE Bayshore Ct	Bay Drive	Bicycle Facility Improvement			2015 - 2020
5	Atlantic Trail	South Pointe Park/South Pointe Drive	5th Street	Trail improvement	$220.000	$296.01	2015 - 2020
6	Atlantic Trail	46 Block/Indian Beach Park	6400 Block/Allison Park	Trail improvement	$927.500	$1,397.279	2015 - 2020
7	Dade Boulevard Bike Path	Meridian Avenue	Atlantic Trail/Beachwalk	Trail improvement	$307.200	$462.797	2015 - 2020
8	Beachwalk Greenway/5th Street	Ocean Drive	Atlantic Trail/Beachwalk	Trail improvement	$19.600	$29.527	2015 - 2020
BICYCLE/PEDESTRIAN PROJECT - PRIORITY IV							
9	Pine Tree Drive/La Gorce	23rd Street	63rd Street	Bicycle Facility Improvements	$250.800	$568.187	2031 – 2040
10	Atlantic Trail (Broadwalk Replacement Project)	23rd Street	4600 Block/Indian Beach Park	Trail improvement	$658.800	$1,492.511	2031 – 2040
11	Atlantic Trail (North of Miami Beach)	North Shore Park	Haulover Park	Trail improvement	$2,128.400	$4,821.890	2031 – 2040
UNFUNDED PROJECTS							
12	I-195 Express Enhanced Bus (Central)	Miami Beach Convention Center	Miami Intermodal Center (MIC)	Express bus on managed lanes	$0.117		Pending
13	I-195 Express Enhanced Bus (North)	Miami Beach Convention Center	Golden Glades Interchange Terminal	Express bus on managed lanes	$0.137		Pending
14	Miami Beach LRT Collins Extension	Miami Beach Convention Center	71st Street	Extend Light rail north to 71st Street	$400.400		Pending

Data Source: Miami-Dade Long Range Transportation Plan 2040

Figure 35: Identified MPO Long Range Transportation Plan (LRTP) Projects within the City

Table 27: Current Short-Term Improvements Efforts by the City's Transportation Department

PROJECT NAME	PROJECT LIMITS	DESCRIPTION	PROJECT TYPE
Pedestrian Safety Improvements	Normandy Drive and 71st Street between E. Bay Drive and W. Bay Drive	Study looks at implementation of crosswalks in order to improve pedestrian safety along 71 Street/Normandy Drive corridor. Due to high operating speed, large distance between signalized intersections and lack of crosswalks- pedestrians are at risk.	Safety
Pedestrian Safety Improvements	Collins Avenue between 79 and 87 Street	Request to FDOT to consider installation of signalized pedestrian crosswalk at Collins Avenue/79 Street (currently no crosswalk) as well as Collins Avenue/83 and Collins Avenue/87 Street (currently unsignalized crosswalks).	Safety
Pedestrian Safety Improvements	Indian Creek Drive/41 Street	Due to roadway geometry, southbound right turns are typically performed at high speed and level of compliance to pedestrian crossing is very low. Request to FDOT to consider installation of RRFB's.	Safety
Pedestrian Safety Improvements	71 Street between Carlyle and Byron Avenue	Request to FDOT to consider implementation of crosswalk along 71 Street between Carlyle and Byron Avenue. Request approved and RRFB's will be installed.	Safety
Safety Improvements	Collins Avenue/24 Street	Request sent to FDOT to install speed feedback signs in both southbound and westbound approach of the curve due to high operating speed through the curve that resulted in a few southbound vehicles running over the curb and colliding with street furniture. Request approved and currently in design.	Safety
Lane Assignment Modification	Collins Avenue/44 Street	Request to FDOT to evaluate current lane assignment at WB approach and consider implementation of double left turning lanes for final lane assignment to be 2 LTL and 2 RTL. Currently 1 LTL and 3 RTL.	Operational
Lane Assignment Modification	Indian Creek Drive/65 Street	Request to MDC to evaluate current lane assignment at WB approach and consider implementation of double left turning lanes for final lane assignment to be inside lane LTL, outside lane shared LTR. Request approved.	Operational
Signal Operation Improvement	Collins Avenue/63 Street	Request to FDOT to consider installation of loops at EB and NB approaches to Collins Avenue/63 Street intersection (fully actuated). Signal currently pre-timed, thus hard to coordinate, particularly in EB direction.	Operational
Lane Assignment Modification	Collins Avenue/15 Street	Request to MDC to evaluate current lane assignment at WB approach and consider implementation of dedicated right-turn lane. Currently, WB approach has only one shared LTR lane.	Operational
Geometry Improvements	Dickens Avenue/71 Street	Request to MDC to evaluate implementation of dedicated right turn lane on the north leg of Dickens Avenue/71 Street intersection that will begin at the south crosswalk of the intersection of Dickens Avenue and 72 Street. This effort will require reduction of current travel lane width. Proposed new lane width would be 10 feet for southbound through and dedicated right turn lane as well as for northbound through lane. Bicycle lanes could be kept and bicycle lane width would be 4 feet for a total of 38 feet of available roadway width. Aforementioned proposed geometry improvement would provide more storage for the vehicles along Dickens Avenue between 72 Street and 71 Street and would reduce number of conflicts and delays that are currently occurring due to conflicts between southbound through and right turning vehicles. The improvement is expected to increase throughput and level of service for the southbound approach as well as intersection as whole. Negative response so far.	Operational

MODE PRIORITIZATION

4. MODE PRIORITIZATION

Arriving to and leaving the City are the first and last steps of a person's journey within Miami Beach. What happens inside the City is as important, if not more, as accessing it. **PROVIDING BETTER TRAVEL CHOICES TO MOVE AROUND THE CITY IS CRUCIAL** for the wellbeing of those who live, work and play in the historic and vibrant environment that is Miami Beach. Although the City residents are leaps and bounds ahead of the entire County when relying on modes other than the personal automobile, the same mindset needs to translate across the entire daily population. Priorities need to be reconsidered and a shift in the transportation paradigm should begin to take place.

IN ORDER TO CHANGE THE WAY WE TRAVEL...

...WE NEED TO PRIORITIZE FOR BETTER ALTERNATIVES

COMMUNITY OUTREACH

Public observations and sentiment are critical for the success of a Transportation Master plan. With that in mind, the City of Miami Beach hosted two public workshops, on June 16, 2015 and on January 19, 2016, to gather AS MUCH FEEDBACK AS POSSIBLE. These presentations took place at progressive stages of this effort and consisted of three sections: Presentation, Question & Answer, and Assessment & Feedback exercise. To further encourage individuals to voice their opinions, comment cards were also developed and distributed during the workshops. These meetings lasted over three hours with a very healthy dialogue between City officials and residents. A number of issues where brought up from various neighborhoods within the City. A list of these poignant comments can be found on the following pages.

Figure 36: City Staff Presenting at the Public Workshop

Figure 37: Public Polling on Proposed Improvements

Public Feedback

The follow are questions and observations made by City residents during the question and answer session:

1. **Question:** Connecting the dots: How is the mainland being connected to the City?

2. **Observation:** The mode split for tourists has to be obtained: People that drive to the beach from Orlando stay at the Beach.

3. **Observation:** Consider bike/walk to school accommodations. Crossings to get to the schools should be safe. Consider obtaining data from the schools about residents with areas of where students are coming from and to the school. It would be great if the best route for students to travel to school safely was established.

4. **Question:** Are there any plans to address safe crossing for bike /pedestrian on causeways?

5. **Observation:** We do not have the infrastructure of New York to be comparing our numbers to them. Penalize cars that come into the City (congestion pricing).

6. **Observation:** Turning Washington into a single lane of traffic in each direction may not function because now you're eliminating one lane of traffic and have the same traffic volume.

7. **Question:** The City is a barrier island and more development is not a good thing. What is being done about emergency vehicles? Also can we provide incentives for hotel guests not to use cars?

8. **Observation:** Consider diverting some of the traffic from the major roads onto parallel minor roads.

9. **Question:** What is being done about the Watson Island development and is the traffic generated from it going to affect the City's traffic?

10. **Observation:** Transit lanes on Washington or anywhere within the Beach would need enforcement. Make sure there is enough budget for that.

11. **Observation:** The residents are tired of construction and so make sure that upcoming planned projects are phased to minimize disruption.

12. **Observation:** Also provide service similar to the Bus Route 150 to and from the airport but along Alton Rd or West Avenue or on the west.

13. **Question:** Why are there light rail connections on the MacArthur Causeway? Why not on I-195, which is in the middle of the City?

14. **Observation:** The scheduling of the MDT buses is not coordinated and the trip from the Beach to the mainland takes too much time.

15. **Observation:** Synchronization of traffic lights is poor, especially when trying to travel on the roadways on bike.

16. **Observation:** Public opinion of the residents should be obtained to know what they really want. Perhaps that includes bringing Metrorail or light rail to the city.

17. **Question:** There is a missing piece of the beach walk, when will the construction of that take place?

Network Evaluation (Public Input Results)

After the presentation and a session of questions and answers, the attendees were requested to give their impression on the proposed TRANSIT AND BICYCLE/PEDESTRIAN NETWORKS. Each attendee was given green and red dots to place upon multiple boards which were set up in the meeting room of the two networks.

GREEN DOT – Represents initiatives being proposed on the two networks which are approved by the public attendees.

RED DOT – Represents initiatives being proposed on the two networks which are disapproved by the public attendees

In a post meeting discussion, it was concluded that the public was dealing with graphics which were not entirely clear to them. This conclusion is made due to the placement of dots at particular locations. Such as red dots clustered on the Bike/Ped corridor proposed on the Julia Tuttle Causeway. Even though there were a number of individuals requesting safe passage for non-motor vehicle means of passage. Its theorized that these red dot placements were done assuming a Bike/Ped corridor would be developed there under current conditions. Conditions, which all present at the public workshop agreed, are unsafe.

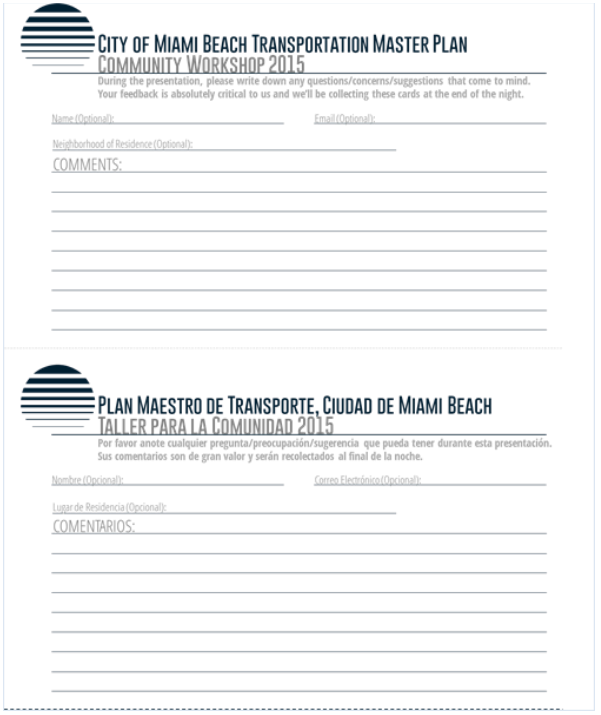
These boards would be modified to show proposed design alterations to the current roadway conditions to create efficient and safe environments for various modes of travel, including Pedestrians and Bicyclists. ***Figures 38*** and ***39*** display public input on the proposed pedestrian and bicycle network and transit network, respectively.

Figure 38: Public Input on Proposed Transit Corridors

Figure 39: Public Input on Proposed Transit Corridors

Comment Cards

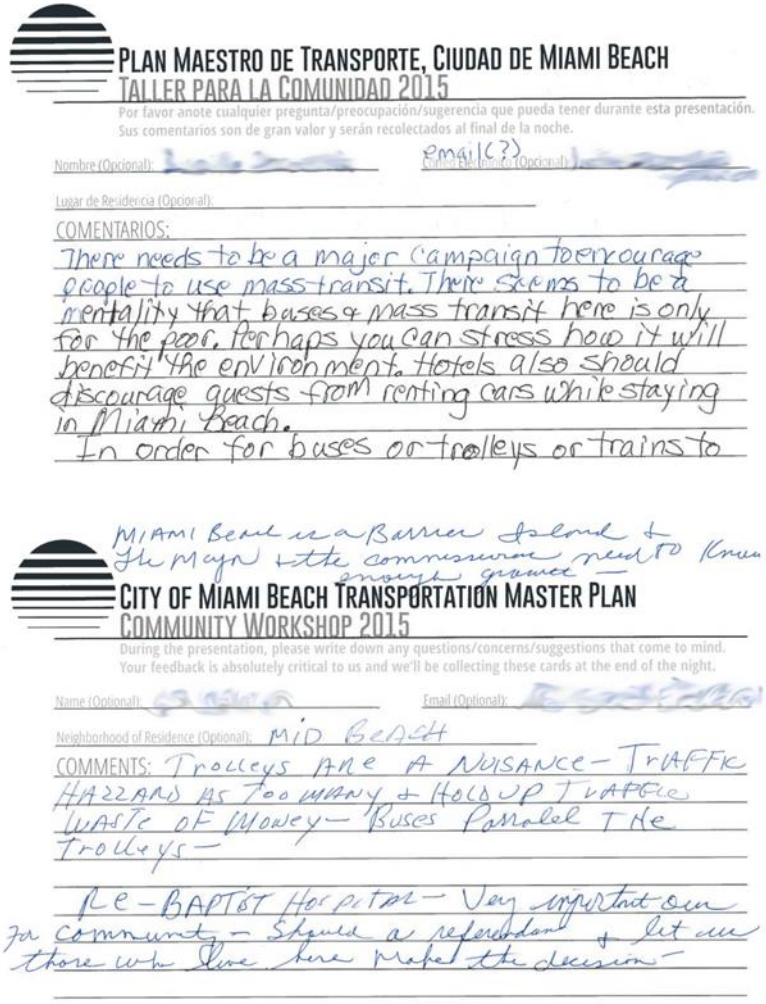
As previously mentioned comment cards were distributed to all individuals attending the public workshop. In any group situation there are people that have vital information that they could share yet feel hesitant to speak up in front of others. These cards are meant to capture those notes of information which would otherwise go unheard. Comment cards were provided in both English and Spanish. ***Figure 40*** shows the template for the bilingual comment cards that were provided to the public.


CITY OF MIAMI BEACH TRANSPORTATION MASTER PLAN
COMMUNITY WORKSHOP 2015
During the presentation, please write down any questions/concerns/suggestions that come to mind.
Your feedback is absolutely critical to us and we'll be collecting these cards at the end of the night.
Name (Optional):
Email (Optional):
Neighborhood of Residence (Optional):
COMMENTS:

PLAN MAESTRO DE TRANSPORTE, CIUDAD DE MIAMI BEACH
TALLER PARA LA COMUNIDAD 2015
Por favor anote cualquier pregunta/preocupación/sugerencia que pueda tener durante esta presentación.
Sus comentarios son de gran valor y serán recolectados al final de la noche.
Nombre (Opcional):
Correo Electrónico (Opcional):
Lugar de Residencia (Opcional):
COMENTARIOS:

Figure 40: Public Workshop Comment Cards Template

The follow are examples of the filled out comment cards received from the public at the end of the meeting:



PLAN MAESTRO DE TRANSPORTE, CIUDAD DE MIAMI BEACH
TALLER PARA LA COMUNIDAD 2015

Por favor anote cualquier pregunta/preocupación/sugerencia que pueda tener durante esta presentación.
Sus comentarios son de gran valor y serán recolectados al final de la noche.

Nombre (Opcional): [redacted] email(?) [redacted]

Lugar de Residencia (Opcional):

COMENTARIOS:

There needs to be a major campaign to encourage people to use mass transit. There seems to be a mentality that buses & mass transit here is only for the poor. Perhaps you can stress how it will benefit the environment. Hotels also should discourage guests from renting cars while staying in Miami Beach.

In order for buses or trolleys or trains to

MIAMI Beach is a Barrier Island & the Mayor + the commissioners need to know enough granted —

CITY OF MIAMI BEACH TRANSPORTATION MASTER PLAN
COMMUNITY WORKSHOP 2015

During the presentation, please write down any questions/concerns/suggestions that come to mind.
Your feedback is absolutely critical to us and we'll be collecting these cards at the end of the night.

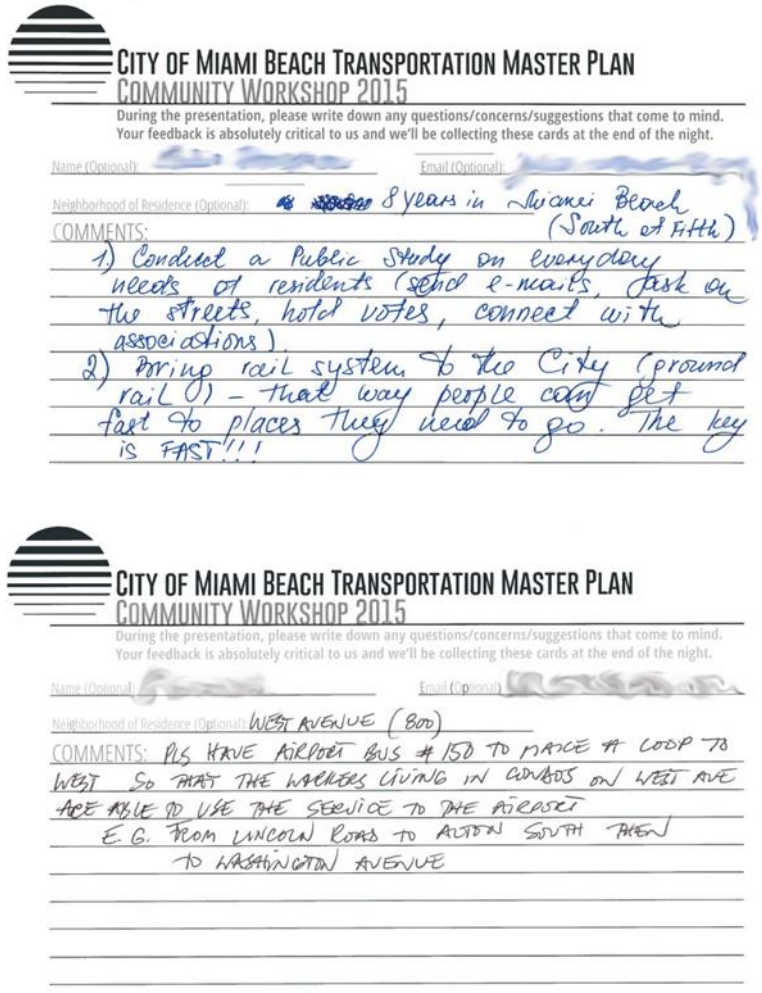
Name (Optional): [redacted] Email (Optional): [redacted]

Neighborhood of Residence (Optional): MID BEACH

COMMENTS: Trolleys ARE A NUISANCE – TRAFFIC HAZZARD AS TOO MANY & HOLD UP TRAFFIC
WASTE OF MONEY – Buses Parallel THE Trolleys –

RE – BAPTIST Hospital – Very important for community – Should a referendum & let the those who live here make the decision –

Figure 41: Public Workshop Sample Comment Cards Feedback



CITY OF MIAMI BEACH TRANSPORTATION MASTER PLAN
COMMUNITY WORKSHOP 2015

During the presentation, please write down any questions/concerns/suggestions that come to mind.
Your feedback is absolutely critical to us and we'll be collecting these cards at the end of the night.

Name (Optional): [redacted] Email (Optional): [redacted]

Neighborhood of Residence (Optional): [redacted] 8 years in Miami Beach (South of Fifth)

COMMENTS:

1) Conduct a Public Study on everyday needs of residents (send e-mails, ask on the streets, hold votes, connect with associations)
2) Bring rail system to the City (ground rail) – that way people can get fast to places they need to go. The key is FAST!!!

CITY OF MIAMI BEACH TRANSPORTATION MASTER PLAN
COMMUNITY WORKSHOP 2015

During the presentation, please write down any questions/concerns/suggestions that come to mind.
Your feedback is absolutely critical to us and we'll be collecting these cards at the end of the night.

Name (Optional): [redacted] Email (Optional): [redacted]

Neighborhood of Residence (Optional): WEST AVENUE (800)

COMMENTS: PLS HAVE AIRPORT BUS # 150 TO MAKE A LOOP TO WEST SO THAT THE WORKERS LIVING IN CONDOS ON WEST AVE ARE ABLE TO USE THE SERVICE TO THE AIRPORT
E.G. FROM LINCOLN ROAD TO ALTON SOUTH THEN TO WASHINGTON AVENUE

Figure 42: Public Workshop Sample Comment Cards Feedback

MODE PRIORITY

When developing the mode priority for the City, examining case studies and listening to the residents was crucial. For example, the focus portrayed by the residents made it clear they had three over-arching topics ever present in their minds: PEDESTRIAN SAFETY, MITIGATING TRAFFIC WITHIN THE CITY AND ALTERNATIVE FORMS OF TRANSPORTATION. It was enlightening and vindicating at the same time.

It was also clear to all involved in developing this transportation master plan that there is prevalent trends in the future ambitions of other cities. Vancouver, for example, is reaching for a concerted effort to reduce the number of private vehicles used on a daily basis within their city. As well as pushing for a dramatic increase of bicycle and pedestrian trips to further increase the health of the city and a reduction of traffic inducing vehicles.

And so these valuable nodes of information and perspective the City Commission was presented with a potential mode hierarchy in relation to how transportation alternatives should be prioritized on all of the roadways accessing and within the City.

Figure 43: City Commission Endorsed Transportation Mode Hierarchy

While pedestrian trips are the shortest of them all, every single person trip begins and ends with a pedestrian trip. We are all pedestrians during some period of the day, and no matter the time, OUR SAFETY IS ABOVE ALL. Therefore, it is only logical for PEDESTRIANS to be the NUMBER ONE PRIORITY within the City as well as entering and leaving it. This essentially means that no transportation project should be planned or constructed, without fist considering all possible improvements for pedestrian facilities. Transit, bicyclists, and freight will be prioritized secondly, and will be on equal planes depending on the type of roadway: transit will be prioritized first on major arterial roadways where its potential benefits are the highest and bicyclists will be prioritized first on all other roadways to create an interconnected network where bicycling can serve as a reliable mode of travel for all users at all times. Freight will be prioritized for specific areas of the City and on a case by case study.

FOLLOWING THE PRESENTATION OF THE SUPPORTING DATA, THE CITY COMMISSIONERS ENDORSED THE PROPOSED MODE HIERARCHY. The proposed mode hierarchy was later adopted by the City Commissioners in July 2015.

2035 MODE SHAREVISION

5. TRANSPORTATION MODE SHARE 2035 VISION

Upon completion of a broad analysis of the available information on existing travel choices and patterns, and upon endorsement of modal priorities from City officials; a vision had to be set. A VISION that would be AN ANCHOR TO STEER THE CITY'S DECISIONS, and constantly would serve as an encouraging reminder of the INTERCONNECTED MULTI-MODAL NETWORK the City wants to have by the year 2035. This vision will help focus the upcoming changes to transportation infrastructure, making it a more APPEALING, RELIABLE, AND SAFE ENVIRONMENT FOR ALL TRAVELERS. The vision for the future citywide mode share is as follows:

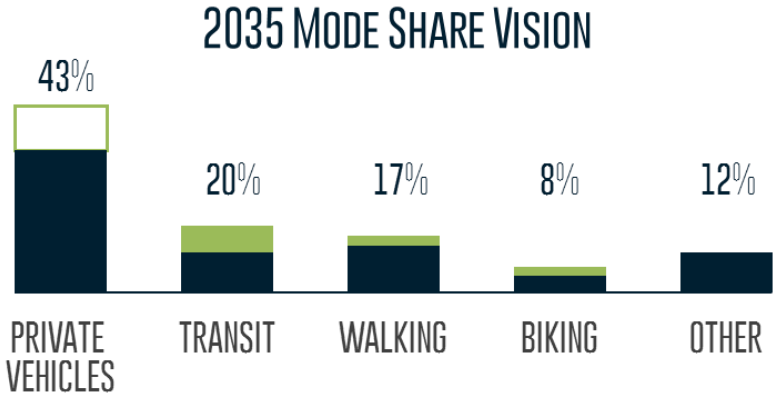


Figure 44: City Transportation Mode Share 2035 Vision

All recommendations emerging from this Transportation Master Plan as well as all other future City plans and projects should focus on moving one step closer to achieving this vision.

Section Sources:

1. http://nhts.ornl.gov/2009/pub/stt.pdf
2. http://www.fhwa.dot.gov/policy/2013cpr/chap1.cfm#10
3. http://ctpp.transportation.org/Pages/default.aspx
4. http://www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html
5. http://www.miamidade.gov/transit/routes.asp
6. MDT Segment Ridership Summary Reports by Urban Transportation Associates
7. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/highlights_of_the_2001_national_household_travel_survey/html/section_02.html

PEDESTRIAN MODE

Walking is the most fundamental form of transportation; almost EVERY single daily person TRIP BEGINS AND ENDS BY WALKING. Walkability is defined by the extent to which people can travel on foot to get to everyday destinations for work, person or family errands, social, and/or recreational purposes. Walkability is providing an environment that integrates physical accessibility, proximity to pedestrian origins, and desirable destinations; it is not just providing a concrete surface raised six inches above the motorized vehicles travel lanes on which people can traverse. The majority of the roadways in the City of Miami Beach provide some sort of pedestrian facility, sidewalks, shared-use paths, pedestrian bridges, the world famous beachwalk/boardwalk, etc. MIAMI BEACH is perceived as ONE OF THE MOST WALKABLE CITIES within the entire Miami-Dade County.

The CITY HAS an average daily population of approximately 206,000 that enjoys its VAST RECREATIONAL ENVIRONMENT comprising of convention centers, museums, parks, numerous shopping amenities and restaurants, and an internationally recognized beach. As a measure to protect the lives of its many residents and visitors, the vitality of its commercial environment, and consequently promote physical activity and nurture social interactions, the City has identified IMPROVING PEDESTRIAN SAFETY, ACCESSIBILITY, MOBILITY, AND CONNECTIVITY as its NUMBER ONE PRIORITY.

Pedestrian Safety

Multiple SAFETY MEASURES may take place within the City TO IMPROVE PEDESTRIAN SAFETY AND VITALITY. These measures include, but are not limited to, physical improvements to existing pedestrian facilities, roadway design featuring traffic calming and management and speed regulations, intersection design, signalization and pavement markings, and readjustments to signal timing as well as pedestrian clearance intervals.

Pedestrian Accessibility

This refers to whether or not pedestrian facilities allow all types of travelers to access and use them effectively. The optimal sidewalk configuration includes the following zones, which are also portrayed in ***Figure 45***:

FRONTAGE ZONE: Area adjacent to the ROW line where transitions between the sidewalk and the adjacent land uses occur. This area is commonly used for public activities such as outdoor cafes and sidewalk sales. The minimum width of this zone is typically 2 feet but it should desirably be 6 feet to 10 feet wide[1, 2].

PEDESTRIAN THROUGH ZONE: Basic portion of the sidewalk that is used for pedestrian travel along the corridor. This zone should be clear of obstructions, straight, continuous, well lit, and functional in all weather conditions. The minimum width of this zone should be 5 feet when situated at least 2 feet from the back of the curb. If adjacent to the back of the curb, then this zone should have a minimum width of 6 feet. This zone should desirably be 8 feet to 10 feet wide[1, 2, 3].

FURNISHING ZONE: Portion of the sidewalk between the back of the curb and the walkable area, which is commonly used for the placement of landscaping, transit stops, street lights, site furnishings, bicycle racks, street signs, utilities and various other pedestrian amenities and objects. This zone is usually 2 feet wide and has a desirable width of 6 feet[1, 2].

Pedestrian accessibility also takes into account curb ramps, hand rails, pedestrian signalization (both visual and/or acoustic), and specialized walking SURFACES THAT ALLOW ALL CITIZENS TO WALK SAFELY.

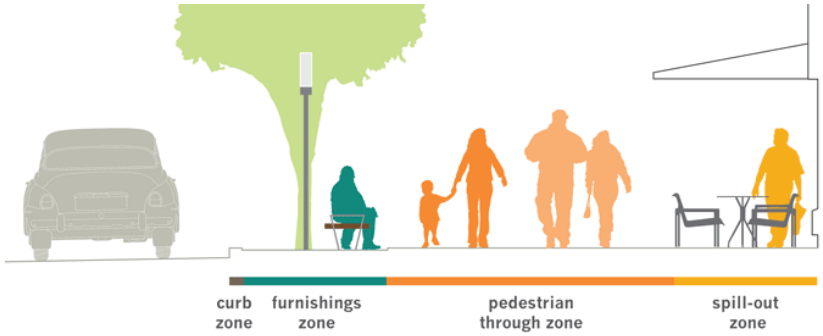


Figure 45: Sidewalk Zones

Figure 46: Sidewalk Zones Application Examples

Pedestrian Mobility

Pedestrian mobility may be measured on how walkable a certain area is. Walkability is a measure that takes into account the transportation environment and whether or not people are incentivized to perform their trips on foot. The principles of a walkable community include:

1. Providing a MULTI-MODAL URBAN TRANSPORTATION NETWORK where the allocation of right-of-way (ROW) is determined based on a community, regional, and urban context.

2. Providing COMPACT MIXED-USE LAND DEVELOPMENTS THAT MOTIVATE PEDESTRIAN TRIPS by location destinations within a ¼ mile radius from permanent and transient residencies.

3. Accommodating intermodal trips through services and amenities such as bike racks, lockers, benches, transit shelters, and showers that allow for CONVENIENT TRANSITIONS BETWEEN MODES OF TRANSPORTATION.

Walkable communities also have characteristics that are observable and appreciable at the pedestrian level. These characteristics may include ground floor businesses, public artworks, textured/colored pavement, decorative street lighting, trash cans, landscaping, historic landmarks, and architectural and urban design features.

Prime examples of WALKABLE STREETS/BLOCKS WITHIN THE CITY may be found NEAR THE NOTORIOUS LINCOLN ROAD where residents of the West Avenue and Flamingo neighborhoods, as well as the plethora of tourists within the City, are incentivized to walk on existing wide sidewalks in order to shop, spend leisure, or participate in cultural/societal events. South Beach is the most commercially active region of the City and improvements within the area may still take place. Prioritizing the pedestrian mode of transportation does not necessarily mean improving accessibility (i.e. widening sidewalks). Even though a certain roadway segment may still lack pedestrian accessibility, OTHER IMPROVEMENTS THAT MOTIVATE WALKING AS A MODE OF TRANSPORTATION MAY TAKE PLACE IN ORDER TO BENEFIT PEDESTRIANS. Generally, these other type of improvements may be regarded as pedestrian mobility improvements which create a walkable environment within the City.

Pedestrian Connectivity

Lastly, pedestrian connectivity is the physical link between origin and destination. Even though all pedestrians may be safe to walk on a certain roadways/path, have access to the roadway, and have a desire to perform a certain trip, not all roadways/paths may connect to their destinations. Improving PEDESTRIAN CONNECTIVITY IS A MATTER OF CONSISTENCY. If the other objectives are attained throughout a corridor then connectivity will be almost completely accounted for. Throughout the City, several island and neighborhoods have been identified as having missing pedestrian links. These locations are: Sunset Islands, Bayshore between Prairie Avenue on the west and Pine Tree Drive on the east and 28th Street on the south and 34th Street on the north, La Gorce Island, Allison Island, missing links within Normandy Isle, and missing links within Normandy Shores. However, connectivity also takes into account the length of a pedestrian trip; even though walking is the most dependable and essential mode of transportation, it is not the most efficient. Therefore connectivity improvements throughout the City may LOOK AT REDUCING THE LENGTH OF PEDESTRIAN TRIPS through the use of pedestrian bridges and/or pedestrian thoroughfares. Currently there are 5 pedestrian bridges, of which three are located in South Beach and two are located in North Beach, and one pedestrian mall (Lincoln Road). Since the City of Miami Beach comprises multiple islands, pedestrian

connectivity is unique and needs to be analyzed according to geographic constraints, pedestrian demand, and sense of place.

Pedestrian Count Stations

Note that without accurate pedestrian count data, engineering analysis of a corridor' pedestrian level of service and level of safety may not be accurately measured. While pedestrian counts are collected for specific tasks and study throughout the City, the obtained data is not being archived, inspected for quality, and made available for future developments. Since the City strives from its vast pedestrian traffic due to it being a major tourist destination and having active citizens, it is recommended that best practices for creating and maintaining a pedestrian count warehouse are adopted. These practices include gathering, quality checking, warehousing, maintaining, processing, and disseminating pedestrian count data. Currently the Transportation Research Board and collaborating Virginia Tech and University of Virginia are working on methods of creating and maintaining a bicycle and pedestrian count warehouse and designing bicycle and pedestrian traffic cunt program to estimate performance measures on streets and sidewalks in Blacksburg, VA, respectively. Once complete, these studies may help the City in establishing the aforementioned data collection effort. In practice today is the Colorado Department of Transportation (CDOT) TRADAS System which maintains a data warehouse for bicycle and pedestrian counts. This system uses permanent count stations developed by Eco-Counters which use passive infrared sensor that are able to differentiate between bicycle and pedestrians. The collected data is correlated with weather patterns and seasonal patterns to identify commuter versus recreational trips and day of the week patterns. Therefore, this system is also able to identify and solve capacity issues, directionality (i.e. connectivity) issues, and weather effects. In addition safety issues may be solved by generalizing the results of a detailed study on how pedestrians observe traffic signals, relating traffic accidents involving pedestrians to pedestrian volumes along adjoining sidewalks, and to determine the number of jaywalkers at intersections or elsewhere as a percentage of total pedestrian volume. Another useful document on collecting pedestrian counts is the "Conducting Bicycle and Pedestrian Counts: A Manual for Jurisdictions in Los Angeles County and Beyond" by the Southern California Association of Governments and Metro.

South Beach Pedestrian Priority Zone (PPZ)

A Pedestrian Priority Zone (PPZ) is a designated area where specific design guidelines and/or standards apply to prioritize the pedestrian mode of transportation on all public transportation facilities within the area. PPZs are typically found within a downtown/central business district or other high-density mixed-use area that has a great demand for pedestrian facilities. When implemented, PPZ guidelines/standards create an integrated network of streets, alleys, pathways, and intermodal hubs that increase the mobility, connectivity, and safety of pedestrians. Even though PPZs prioritize the pedestrian mode of transportation, the other modes of transportations (automobile, transit, and bicycle) may also be positively impacted due to shared benefits of certain improvements, such as, buffered sidewalks (either by the addition of street furniture, bike lanes, or parking lanes) and bulb-outs/curb extensions which benefits transit operation. Improving pedestrian transportation is cornerstone to improving a community's longevity and livability, as well as adopting an affordable and environmentally sustainable transportation system. ***Figure 47*** displays the areas within South Beach identified as PPZs.

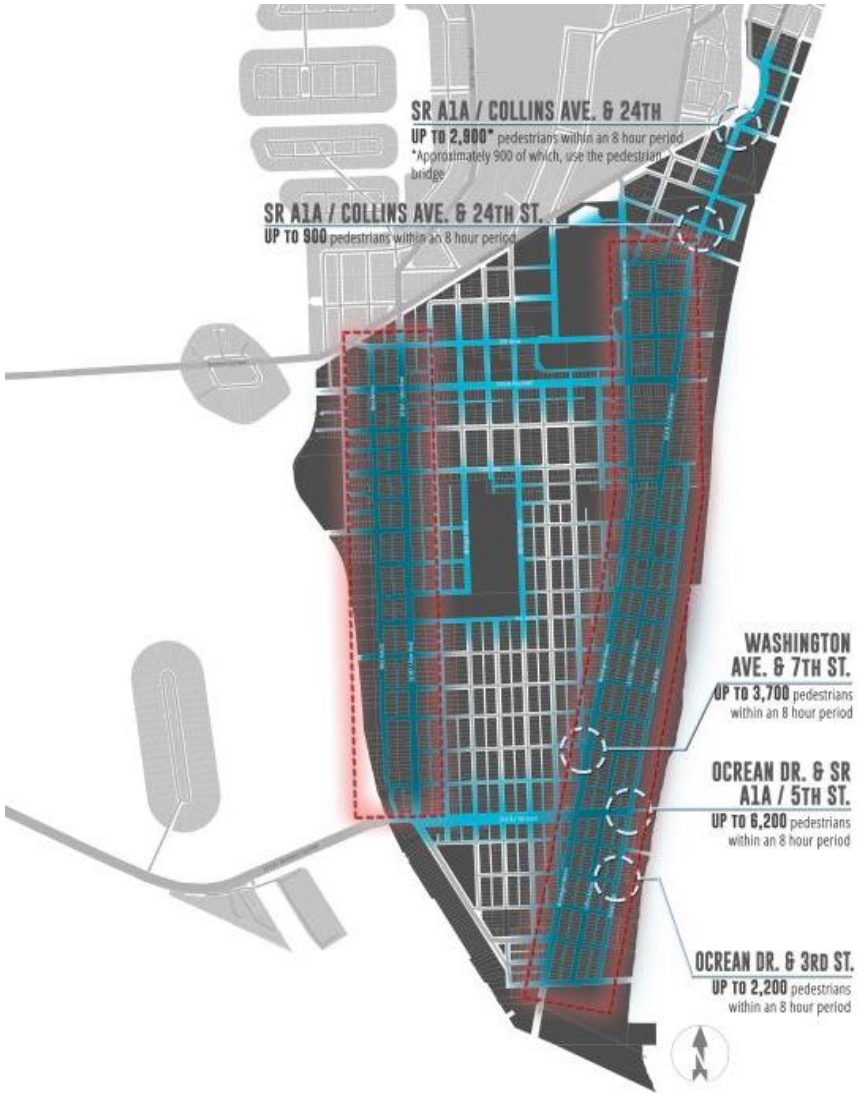


Figure 47: South Beach Pedestrian Priority Zones

The following guidelines are to be followed when developing and recommending transportation projects within the areas of South Beach that have been defined as PPZs, in an approach to create destinations within the City where pedestrian safety, accessibility, mobility, and connectivity are the main focus within the public realm. :

PROVIDE ADEQUATE SIDEWALK WIDTHS

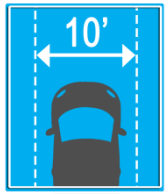
where the optimal sidewalk has a 2 ft. Frontage Zone for street-level retail/culinary stores, building entrances, and greenspace; 6 ft. Walking Zone clear of any obstructions; and a 6 ft. Furnishing Zone that buffers pedestrians through the placement of utilities, street furniture, greenspace, and transit stops. The Frontage Zone and Furnishing Zone are optional but should be priority when ROW permits.

PROVIDE 10 FT. WIDE HIGH-EMPHASIS CROSSWALKS AT ALL INTERSECTIONS

with properly aligned curb ramps on every leg of the intersection. Midblock crosswalks shall also be provided at all blocks greater than 400 ft. in length and when warranted. These crosswalks should be high-emphasis with median refugee islands where sufficient ROW exists. Raised pedestrian crosswalks should also be considered where applicable to reduce vehicle speed, increase pedestrian visibility, and increase accessibility for disadvantaged civilians.

DESIGNATE 25 MPH SPEED LIMIT

on all automobile and transit facilities within the PPZ. All reconstruction and new construction facilities shall be designed with a 30 mph speed limit where traffic calming devices such as gateways and chokers may be installed at specific locations of a corridor within the PPZ to diminish impact on the automobile mode.

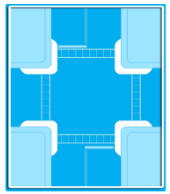


LIMIT MIXED TRAFFIC LANE WIDTHS

to a maximum of 10 ft., with the exception of outside lanes and turning lanes that may have a maximum width of 12 ft. to accommodate transit and turning vehicles. Sharrow lanes are also limited to a maximum width of 12 ft. while dedicated transit lanes are limited to a range between 15 ft. and 12 ft.

IMPROVE PEDESTRIAN SIGNALIZATION

at all intersections by offering pedestrian countdown signals at all street crossings, providing leading pedestrian intervals (LPI) at signalized intersections, maximizing pedestrian crossing times to one (1) second for every 2.8 ft. of distance, implementing the minimum number of traffic signal phases, minimizing traffic signal cycle lengths, and prioritizing pedestrian signals over traffic signals.



PROVIDE SPECIFIC TRAFFIC CALMING IMPROVEMENTS on all streets within the PPZ. These specific traffic calming improvements include bulb-outs/curb extensions on streets with parking-lanes and landscaping on the Furnishing Zone of the sidewalk or on the median if applicable. Bulb-outs/curb extensions shall extend a minimum of 20 ft. on either side of a crosswalk and a minimum of 45 ft. when transit stops are present. These curb extensions shall not have turning radius greater than 15 ft. except on corridors with transit service.

PROVIDE SUFFICIENT SHADING AND LIGHTING on the Frontage Zone, Furnishing Zone, and/or median of a street. Providing sufficient shade may be achieve through the use landscaping, required canopies on adjacent developments, overhangs, awnings, arcades and/or other nonpermanent architectural sun controlling devices above sidewalks. Artificial shading devices should not project more than 8 ft. beyond the building façade and should be installed at least 10 ft. above the sidewalk surface. Providing sufficient lighting may be achieved through the use of decorative pedestrian scale lights that are broad spectrum (white in color), such as metal halide, that provides high levels of uniform lighting on and along all sidewalks and pedestrian ways. These improvements also serve the purpose of complementing the aesthetics of the surrounding PPZ.

PROHIBIT RIGHT TURNS ON RED for automobiles and buses and provided green arrow turn signal. This would include the addition of a signal timing phase and revision of pedestrian clearance intervals on all intersections within the PPZ.

On a concurrent effort to this Transportation Master Plan, the City has its own Street Design Guide, and in this guide, the City has also identified similar policies and benchmarks for PPZs. Additional characteristics not included above may also be implemented in areas where further pedestrian safety is required. These characteristics are adopted in the following guideline:

CRITICAL ZONES within PPZs that include even lower traffic speed limits of 15 mph with textured pavement and crosswalk which may be colored treated for raised alertness. Textured/patterned pavements accepted by the Department of Transportation include Paveway STS, FrictionPave, Duratherm, TrafficPatterns, and Liquid Brick Eco.

Section Sources:

1. NACTO Urban Street Design Guide
2. Boston Complete Streets Design Guidelines
3. FDOT Plans Preparation Manual, Vol. 1. 2015

BICYCLE MODE

Management of Bicycle Facilities

When looking to provide a fully interconnected bicycle network for the City and broadly analyzing the existing roadway facilities, the following TYPES OF BICYCLE ACCOMMODATIONS, along with the toolbox provided in the BPMP, were considered to provide recommendations.

EXCLUSIVE SHARED BICYCLE/BUS LANES (SBBL)

This is a lane solely dedicated for the use of buses and bicyclists. Vehicles performing right turns may also use this lane.

Sufficient signage is essential to indicate that bicycles are allowed to travel on these lanes.

The safety of bicyclists in bus lanes may also be improved if adequate training is provided for bus operators.

DEDICATED CONVENTIONAL BICYCLE LANES

As it pertains to the study corridor, conventional bicycle lanes should be 4 feet in width when adjacent to the curb and gutter, and 5 feet in width when between a travel lane and an on-street parking lane[1].

BUFFERED BICYCLE LANES

Provide space for bicyclists to pass each other without encroaching into the adjacent general use traffic lane.

Can encourage bicycling by contributing to the perception of safety.

Buffer separation should be at least 3 feet in width.

CONTRA FLOW BICYCLE LANES

Bicycle facilities designed to allow cyclists to travel legally in the opposite direction on a one-way street, delineated from the opposing motor vehicle lane with double yellow striping.

Provide connectivity and access for bicyclists traveling in both directions and reduce dangerous wrong-way riding.

Special consideration should be taken at intersections to account for the expectancy of those traveling in the opposite direction.

SHARED USED PATH

These allow bicycle movement in both directions on one side of the road.

Research shows that they are more attractive for bicyclists, and that they reduce out of direction travel by providing contra-flow bicycle movement.

Special consideration should be given at transit stops to manage bicycle and pedestrian interactions.

Special consideration should be taken at intersections to account for the expectancy of those traveling in the opposite direction.

A 3 feet buffer on either side of the shared use path is the minimum separation that should be between the curb and gutter and an on-street parking lane to avoid conflicts with parked vehicles and pedestrians.

Additional to providing the aforementioned bicycle accommodations, other enhancements which cannot be represented on a roadway's typical section, could be implemented to create a better environment for bicyclists. The following items could be provided as improvements for the bicycle mode:

BICYCLE PARKING

Short-term (Bike racks)

This provides bicyclists, who generally park for two hours or less, a convenient and readily accessible place to station bicycles. It should be located within a reasonable distance (50 feet) from the area most frequented by cyclists.

Sufficient bicycle racks should at least be provided on most, if not all, transit stops/stations within the study corridor.

Long-term (Bike lockers and/or cages)

This provides bicyclists who stay at a site for several hours a secure and weather-protected place to store their bicycles. It should be located on site or within 750 feet of the site since daily bicycle commuters are generally willing to walk a short distance if they are confident the parking is secure.

BIKE BOXES

NACTO defines a bike box as a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase.

COLORED BICYCLES LANES

Colored bicycle facilities improve safety by alerting drivers of the presence of bicyclist and attract users to bike around the City. However, this innovative technique needs further analysis and locations where this design approach may be performed need to subsequently be identified and approved.

WAYFINDING (SIGNAGE)

Adequate signage is essential to direct bicyclists, who may be unfamiliar with the area, to places of interest. Wayfinding signs for cyclists should include travel distances, direction arrows, and facility names. Additionally, they should complement other roadway and City signage.

TRANSIT MODE

An essential component to meet the mobility needs of Miami Beach's residents, visitors, and employees, improve and sustain the City's economic vitality, and support the growth and development of urban mixed-use centers, is providing a prevalent system of interconnected transit services.

TRANSIT SERVES AS AN ALTERNATIVE TO THE PRIVATE AUTOMOBILE to reach the City from the mainland and TO MAKE LONGER TRIPS to connect between many of the City's important destinations that may be too far for people to walk or bike. Therefore, providing high quality transit service is an important part of developing a sustainable transportation system and providing options to travel to and within the City without the need to rely on a private vehicle.

Transit services within the City of Miami Beach consist of regional and local routes operated and maintained by Miami-Dade Transit (MDT), and a local trolley service provided by City. There is a growing proportion of the City's DAILY POPULATION that is RELIANT ON these TRANSIT SERVICES to enter, travel within, and/or leave Miami Beach; a population that COULD CONTINUALLY INCREASE as the City and region continue to grow, and AS MORE RELIABLE MOBILITY OPTIONS ARE PROVIDED.

Transit Infrastructure

Exclusive Transit Lanes

As a way to incorporate the overall vision for and interconnected and reliable transit network for the City, exclusive transit lanes were considered for the development of recommendations for corridors in which the transit mode is prioritized. The provision of a lane(s) solely dedicated to transit offers a range of opportunities for a corridor, those being in the operations sector as well as the economic one. Any recommendation of exclusive transit right-of-way within any major City corridor should be measured on its viability and overall suitability for the specific corridor, and studied accordingly. The following should serve as a guideline when analyzing future feasibility of any project recommended by this TMP considering exclusive transit lanes:

- Exclusive transit lanes allow for the implementation of BUS RAPID TRANSIT (BRT) systems.
  - BRT is a form of rapid transit that combines stations, vehicles, services, and ITS elements into an integrated system with a predominant identity.
  - Planning BRT projects requires a detailed assessment of demands, costs, benefits, and impacts.
- BUSES HAVE HIGHER OCCUPANCIES THAN AUTOMOBILES; hence economic benefits can result from increased ridership. Higher ridership numbers could lead to fewer automobiles on the roadway, which could translate into passenger time savings as well as a reduction on automobile operating and maintenance costs.
- CONCURRENT FLOW BUS LANES should allow at least two adjacent general traffic lanes in the same direction of travel.
  - Research shows that concurrent flow curb bus lanes are relatively easy to install, their costs are low, and they minimize the street space devoted only to transit. However, they usually present enforcement difficulties and their operational benefits may be reduced due to conflicts between right-turning traffic and pedestrians.
- CONTRA FLOW BUS LANES should allow at least two traffic lanes in the opposite direction of travel.

  - Research shows contra flow curb lanes enable two-way operation for buses on one-way streets, which may increase the number of curb faces available for passenger stops, completely separate transit from general traffic flow, and are generally self-enforcing. Contra flow lanes require buses to run against the prevailing traffic signal progression, limit passing opportunities around stopped or disabled buses, and create conflicts with opposing left turns. Additionally, proper markings and signage should be used along with strict enforcement to maintain proper use of the lane as well as the safety of the corridor.

- COMMUNITY WILLINGNESS to support public transportation, foster transit-oriented development, and enforce bus lanes is essential. Therefore, extensive and effective public participation in the decision-making process should be well established and maintained.

Certain benefits to transit can come from other improvements that do not necessarily pertain to a corridor's typical section. While, enhancement to the existing transit service can originate from a number of different sources, those that particularly apply to identified transit corridors and that can potentially be implemented are:

- CAPCITY STRATEGIES
  - Realigned transit SERVICE SCHEDULES.
  - Monitoring the security of transit patrons, stations, and vehicles.
  - Enhanced transit AMENITIES AND SAFETY.
  - Universal fare cards for regions with multiple transit agencies.
  - Installation of BUS-PRIORITY TRAFFIC SIGNALS.
  - Provision, if feasible, of QUEUE-JUMPER LANES at intersections where there are no stops.
    - This applies to the alternatives that consider transit in mixed traffic.
- CAPCITY STRATEGIES
  - More frequent transit or expanded hours of service.
  - Expanding the transit network through new bus and rail services
- CONSOLIDATION OF STOPS.
  - This would have to be coordinated with Miami-Dade Transit (MDT).
- Infrastructure enhancements (Improvements to stops).
  - Provide shelters where none are present or improve them where they are inadequate. As well as Provisions for bicycles on transit vehicles and at transit stops
  - Provide REAL TIME PASSENGER INFORMATION, or the capability to provide it in the near future, at bus stops.
  - Provide travelers with information on travel conditions as well as alternative routes and modes
  - IMPROVE WAY-FINDING.
  - Improve seating accommodations.
  - Provide bicycle racks.
- Relocation of STOPS TO THE FAR SIDE of the signalized intersections where feasible.
  - This would have to be coordinated with Miami-Dade Transit (MDT).

Figure 48 is a compilation of various urban centers which accommodate Exclusive transit lanes. Each example has different configuration which is labelled accordingly.

Figure 48: Bus Only Lane Examples

Transfer Locations

Existing policy dictates that the City shall maintain constant coordination with MDT to construct intermodal transit facilities to serve existing and future multi-modal transportation uses.

One of the most critical aspects of a successful transit environment is how to manage and operate transfers. In terms of operation, transfers are usually undesirable events since they create delays and economic burdens on the transit system. In addition, transfers play a unique factor in enticing or discouraging potential and current transit users. Ineffective transfer stops may cause boarding delays, missed departures, long waiting time, and/or bus crowding due mostly to inadequate or insufficient infrastructure. Furthermore, bigger improvements such as transfer centers are often regarded as undesirable neighborhood developments that are difficult to site and that generate unwanted noise, emissions, and potentially loitering passengers. However, TRANSFERS ARE AN ESSENTIAL PART OF AN EFFECTIVE TRANSIT SYSTEM because they maximize the coverage area and diversity of active transportation services. Hence, in order to obtain a successful transit environment, it is of critical importance to provide efficient and attractive transfer stops/centers to improve the quality of transit services as well as support the surrounding community.

In order to create relevant transfer stops/centers it is important to make these facilities consistent with the Comprehensive Plan for the City of Miami Beach. By taking into consideration adjacent projects, integrating the culture of the surrounding community, and potentially venturing into joint development with other sectors (such as retail and/or civic spaces).

TRANSFER STOPS/CENTERS may cause substantial benefits that IMPROVE LIVABILITY, MOBILITY, AND ACCESSIBILITY. Part of this effort begins with identifying key locations based on existing transit activity (boardings and alightings, converging transit routes, available right-of-way (ROW), existing infrastructure, surrounding neighborhoods, transportation priorities, and existing and future land use. Logically, since the primary goal of transfer stations is to improve transit services, ridership data and converging transit routes locations will provide the most relevant information on where transfer stops/centers are likely to be needed within the City.

Review of the existing activity for all the stops within the City identified CURRENT AREAS WITH THE MOST TRANSIT DEMAND. These areas and/or bus stops are as follows:

- City owned parking lot located on 7251 Collins Avenue, Miami Beach, FL 33141 (three bus stops on the north, east, and west sides of this lot)
  - Served by routes 79, 108, 115, 119, and 120 northbound; routes 79, 108, 112, 115, 117, 119, and 120 southbound; and routes 79, 112, and 117 eastbound
- W 41st Street between SR A1A/Indian Creek Drive and SR A1A/Collins Avenue (two bus stops within this 250 ft. segment of the street)
  - Served by routes 103, 112, 113, 119, and 120 eastbound; and routes 62, 103, 110, 112, 113, 119, 120, and 150 westbound
- Lincoln Road between Washington Avenue and James Avenue (two bus stops within this 300 ft. segment if the road)
  - Served by routes 103, 119, 120, and 150 eastbound; and routes 101, 115, 117, and 119 westbound

Other identified locations with prevalent transit activity include:

- SR A1A/Harding Avenue between 85th Street and 86th Street (two bus stops served by five routes)
- Mt. Sinai Hospital (two bus stops served by four routes)
- Alton Road between SR A1A/5th Street and 7th Street (two bus stops served by three routes)
- Washington Avenue between SR A1A/5th Street and 6th Street (two bus stops served by four routes)
- Washington Avenue between 13th Street and 14th Street (two bus stops served by four routes)
- Indian Creek Drive between 28th Street and 29th Street (one bus stop served by 6 routes)

The majority of the identified locations with high transit activity are near or within: SR A1A (Indian Creek Drive, Collins Avenue, and 5th Street), Alton Road and Washington Avenue. All of these corridors have been identified as transit priority corridors by this TMP, further supporting that these LOCATIONS ARE VALUABLE OPTIONS FOR TRANSFER STOPS/CENTERS AND SHOULD BE FURTHER STUDIED, perhaps individually, for the feasibility of developing major transit infrastructure within the City.

Furthermore, review of existing documents revealed four (4) proposed transfer stations throughout the City. The following table summarizes the transit transfer station identified in the City of Miami Beach Transportation Element according to the 2007 Coastal Communities Transit Plan.

Table 28: Previously Planned Transit Transfer Station within the City

PLANNED TRANSIT TRANSFER STATIONS	PHASE	DESCRIPTION

South Beach Bus Transfer Station	I	Implement temporary street bus transfer facility in phase I at 23rd Street between Collins and Park Avenue. Phase II calls for identifying a better location that can accommodate up to 7 buses and can load and unload passengers safely and easily.
North Beach Transfer Station	I	Implement transfer facility at existing stops between 71st Street and 73rd Street on Collins Avenue and Abbott Avenue. Phase II will construct a bus transfer facility on City-owned property between 72nd Street and 73rd Street, Collins Avenue and Abbott Avenue.
Middle Beach Park and Ride Station	III	The park and ride station would be located around the area of SR 907/Alton Road and N. Bay Road. Phase I calls for a feasibility study prior to design and construction.
South Beach Interceptor Park and Ride Station	III	Two facilities are proposed in the South Beach area. The first would be located near Alton Road and MacArthur Causeway, and the second would require further study to locate an additional facility within the South Beach Corridor.

The Miami-Dade Metropolitan Planning Organization (MPO) maintains an interactive Intermodal Center Locator Map which identifies potential transit centers within the entire Miami-Dade County (see ***Figure 49***). Included within the City limits there are four (4) potential transit centers located at: Mt. Sinai, Collins Avenue/44th Street, Collins Avenue/72nd Street, and South Miami Beach (on 5th Street and Alton Road). The MPO identified potential South Miami Beach Transit Center differs from the South Beach Bus Transfer Station proposed by the City's Transportation Element.

POTENTIAL AREAS WHERE TRANSFER STOPS/CENTERS COULD BE PROVIDED HAVE BEEN IDENTIFIED through reviewing existing bus routes, City stop activity (boardings and alightings), and transit documents. This locations and the desired transit infrastructure improvement are summarized in ***Figure 50***.

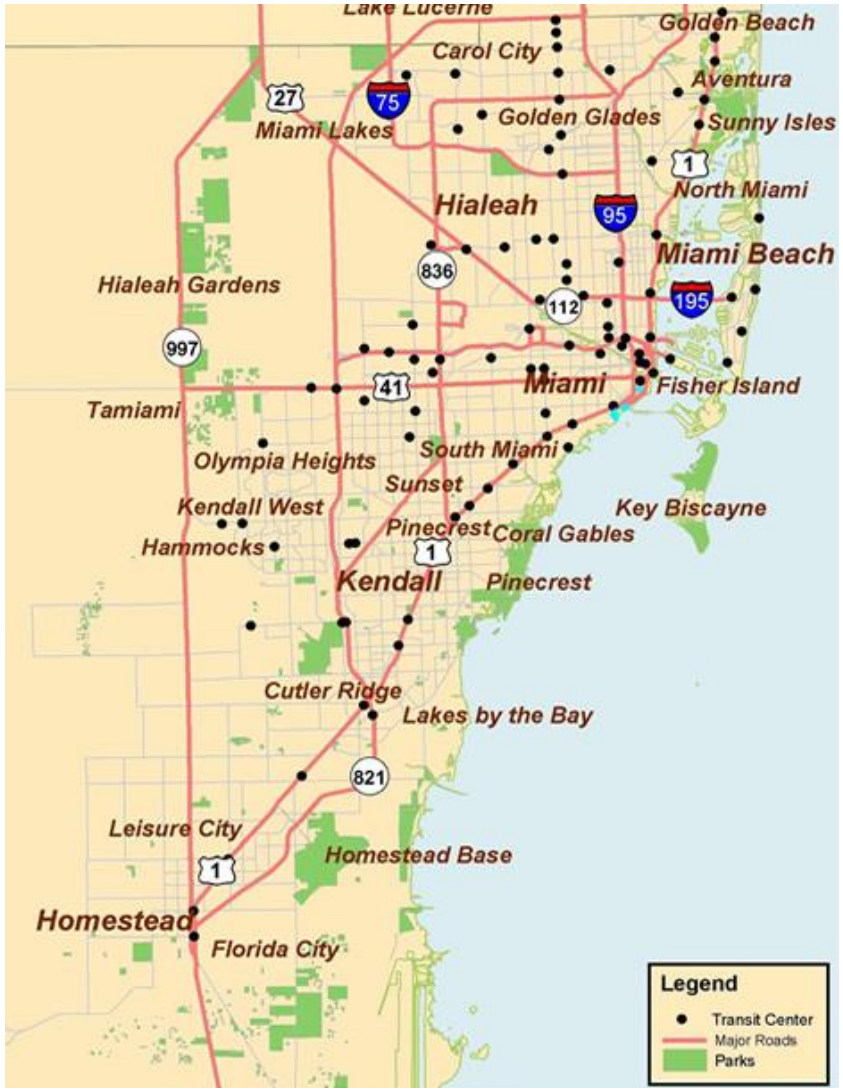


Figure 49: Miami-Dade MPO Intermodal Center Locator Map

While all of these transit facilities can be considered transfer areas, they may vary in size and functionality; transfer stops, transfer center/stations, and park-and-rides are all different types of transit infrastructure. Many examples of these exist in the region of Miami-Dade County, within the United States, and abroad. The following criteria differentiate and define each of these aforementioned transit facilities and should serve as guidelines for future decision making process during implementation of projects.

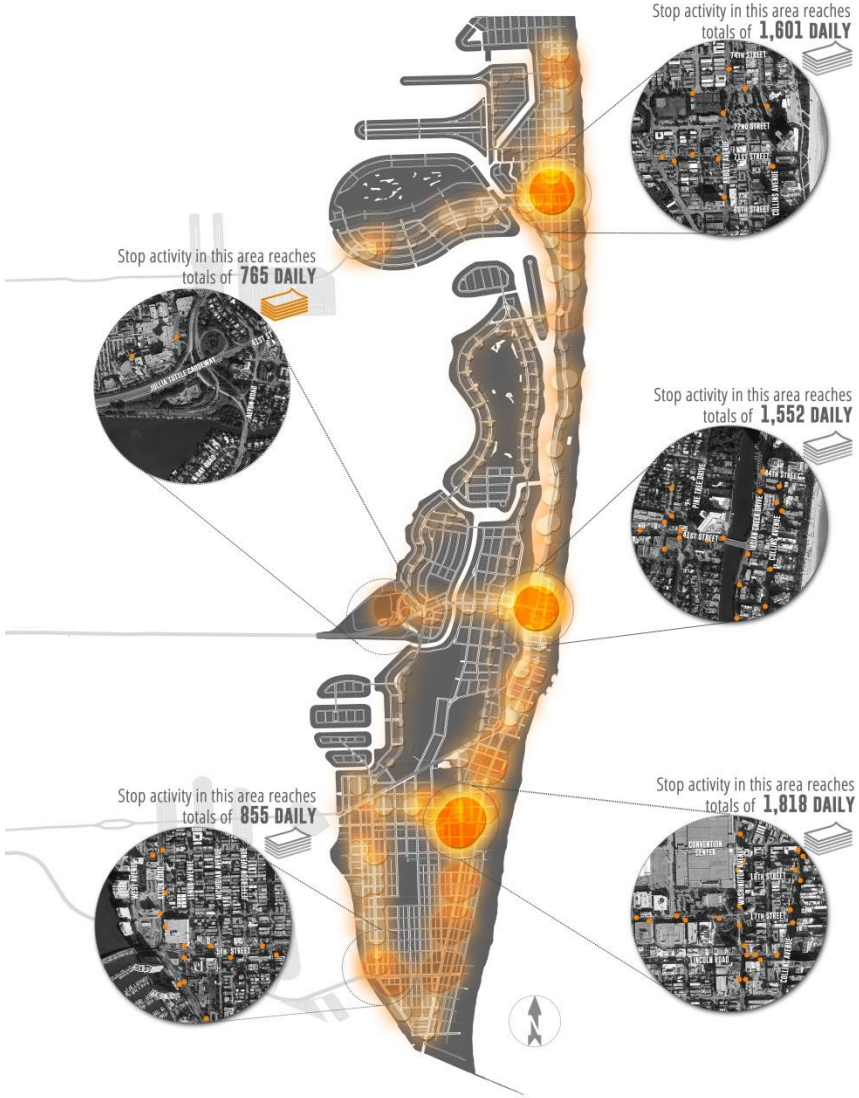


Figure 50: Potential Areas for Future Major Transit Infrastructure

Transfer Stops

A transfer stop may be any enhanced bus stop which is in accordance to ADA standards and includes bus bays that accommodate at least two articulated buses. A 75 ft. passenger loading zone is adequate for a standard 40 ft. bus or a 60 ft. articulated bus; hence a transfer stop should have at least a 150 ft. passenger loading zone. An enhanced bus stop must include bus shelters, benches, and trash cans. Since a transfer stop will have waiting passengers it is suggested that longer bus shelters, or multiple bush shelters, are used such as the linear bus passenger platforms with continuous glazed canopies in the MacNab Transit Terminal (see ***Figure 51***).

Figure 51: MacNab Transit Terminal (Ontario, Canada)

Transfer Centers/Stations

A transfer center/station is a more elaborate transfer stop that may accommodate more than two articulated buses and may include amenities such as retail, restrooms, and lounge. Since most of the transit services in the City are north-south, linear transfer centers are recommended in such that buses can enter, drop and pick-up passengers, and re-enter a taxi that seamlessly merges into the adjacent corridor traffic. Examples of linear transfer centers are presented in ***Figures 52 and 54***.

A great example of amenities that may be included in transfer center is the MacNab Terminal which includes a 2-story terminal building includes a green-roof, and provides a climate-controlled public waiting area, washrooms, staff lounge and dispatch office. Extensive glazing maximizes sightlines throughout the terminal. Special emphasis was placed on achieving universal accessibility and effective signage/wayfinding throughout the terminal. Streetscape elements include trees, lighting, decorative paving treatments and metal screen structures to enable “vertical greening.”

In order to integrate other transit development occurring within the City, these centers could be expanded to include a streetcar stop. Hence these transfer centers may also serves as multi-modal hubs where passengers may transition between transportation modes (if cyclist are accommodate through placement of bike lanes, bike racks, and lockers this quality may be further enhanced and expanded to attract other passengers). An example of an integrated streetcar and bus transfer station may be observed in ***Figure 53***.

Figure 52: MIC Intermodal Station Terminal (Miami, FL)

Figure 53: Münchner Freiheit Station (Munich, Germany)

Figure 54: Ann Arbor Transportation Authority Blake Transit Center (BTC)

AUTOMOBILE MODE

Management of Roadways

As they reach capacity, **TRANSPORTATION SYSTEMS MUST BE CAREFULLY MANAGED** to prevent unacceptable trends in congestion, safety and the daily travel choices of individuals. With proper planning, relatively minor actions that resolve localized barriers and bottlenecks can have a large benefit for the overall system. **A CHALLENGE, HOWEVER, IS CHOOSING THE MOST EFFECTIVE TOOL FOR MANAGING A ROADWAY SINCE THERE ARE MANY OPTIONS TO CHOOSE FROM.** These "tools" range from short-term patches to long-term strategies and may be adopted to fit the local transportation environment.

A reliable source of existing tools for roadway management is the Federal Highway Administration (FHWA) and its Congestion Management Process Guidebook. Even though FHWA developed this process specifically for MPOs that manage metropolitan areas with a population exceeding 200,000, this process may be applied locally to analyze and manage roadways within the City of Miami Beach.

CONGESTION MANAGEMENT is the application of strategies to improve transportation system performance and reliability through a **SCIENTIFIC PROCESS THAT IDENTIFIES TRANSPORTATION NEEDS, GOALS AND APPROPRIATE SOLUTION**. Congestion concerns inevitably tie into community objectives regarding transit use, livability, and land use. In addition, because transportation tends to provide a structure for how to consider the design and timing of various other capital projects, in particularly utility projects, stormwater improvements, and parks and trails projects, **CONGESTION MANAGEMENT SHOULD NOT BE A STANDALONE PROCESS BUT INSTEAD AN INTEGRAL PART OF A LARGER PLANNING EFFORT.** Managing roadways is usually synonymous with managing congestion.

The challenge with traffic congestion is that it is not a single facet problem that may be tackled with one solution. As illustrated by ***Figure 55*** provided within the Atlanta Regional Commission (ACR) 2009 Transportation Fact Book, **TRAFFIC CONGESTION IS A THREE-DIMENSIONAL ISSUE WITH INTENSITY, DURATION, AND EXTENT OF IMPACT.** On a particular roadway traffic congestion may range from minimal to severe with unacceptable levels of service. This characteristic is defined as the intensity of the congestion (i.e. how much supplied space is occupied by car demand?). Intensity is usually the most visual characteristic of congestion, but the truth is that if severe congestion only occurs every Friday night on a roadway then that roadway is not necessarily out of capacity. Congestion duration is the time traffic congestion lasts on a roadway and this measurement is critical because it has the potential of increasing both congestion intensity and extent. Lastly, congestion extent is the amount of people affected by traffic congestion and the local and regional impact. Congestion on La Gorce Drive will definitely not have the same extent as to congestion on the MacArthur Causeway.

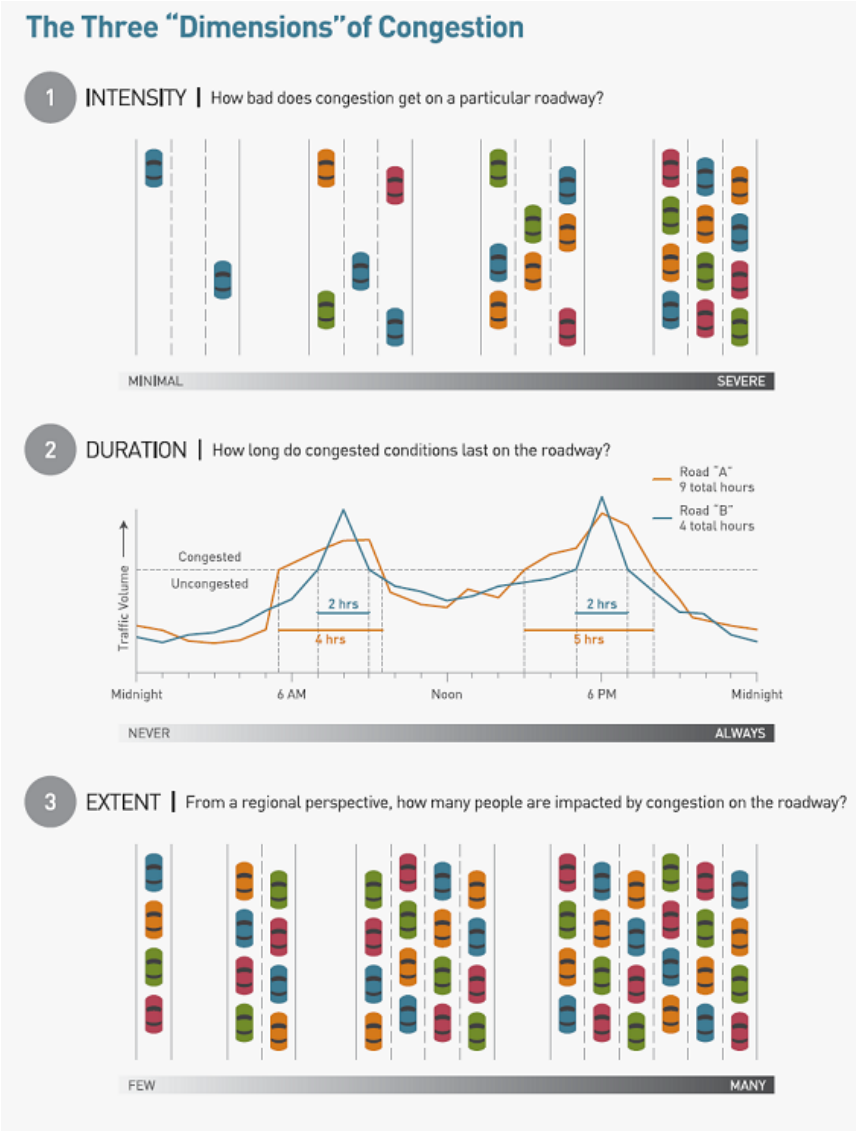


Figure 55: The Three "Dimensions" of Traffic Congestion (ACR 2009)

MULTIPLE FACTORS INFLUENCE WHAT ROADS PEOPLE TAKE AND AT WHAT TIME THEY PERFORM THEIR TRIPS, most importantly though are the location of major trip generators, the seasonal variations in traffic, the time-of-day variations in traffic, and the type of trips people make (i.e. work trips, non-work trips, and most particular to the City of Miami Beach tourist-trips). It is important to identify, locate, and analyze the trip patterns of major trip generators such as hospitals, hotels, tourist attractions, office centers, and shopping malls. These land uses attract many people year-round and have distinct traffic patterns that should be accounted for through provided infrastructure. Consequently, understanding traffic patterns leads a need of understanding the types of trips people make and where the mode of transportation predominantly used is the most effective at accomplishing those trips. Hence, because traffic patterns are observations over a period of time that changes depending on factors such as time-of-day and season, VARIABILITY MAY BE CONSIDERED A FOURTH DIMENSIONS OF CONGESTION.

With an understanding of what traffic congestion is, a wide range of congestion management tools may be developed. As per the FHWA

Congestion Management Process Guidebook these tools may be grouped into strategies as follows.

Demand Management Strategies: nonautomotive strategies that change travel behavior by substituting commuter trips with telecommuting, reducing urban sprawl, and/or shifting transportation mode split.

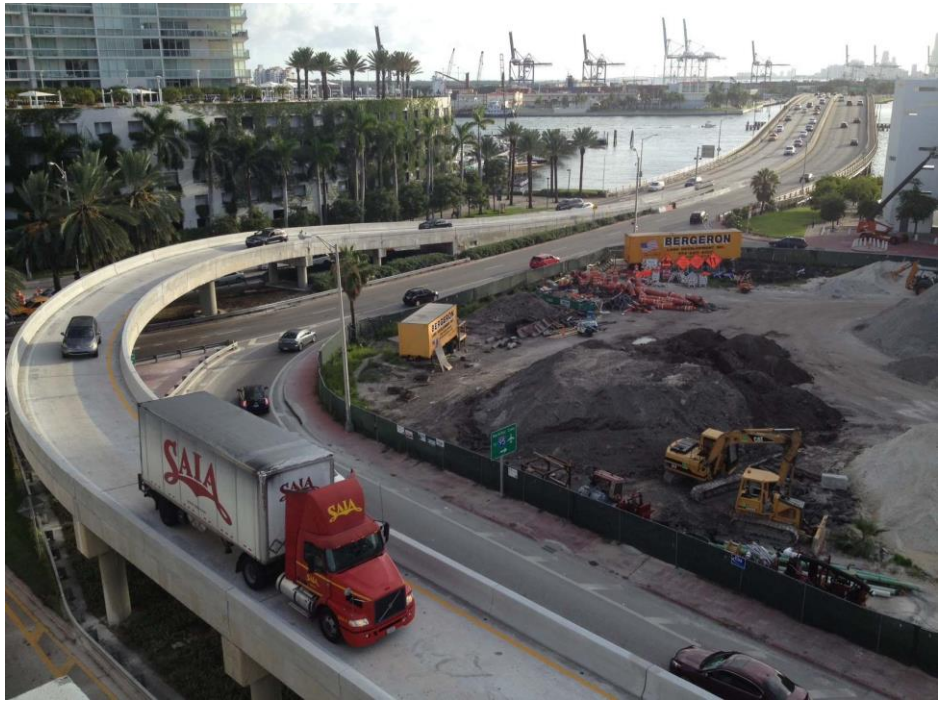
- Promoting Alternatives
  - Encouraging mass transit, biking, and walking as alternatives of automobile trips through improved infrastructure, marketing and outreach programs, multimodal considerations, and transit-oriented development (TOD)
- Managing and Pricing Assets
  - Implementing congestion pricing strategies such as high-occupancy toll (HOT) lanes, express lanes similar to I-95, or pricing fees for the use of travel lanes by the number of persons in a vehicle and per time-of-day
  - Implementing parking management strategies (see “Developing a Parking Strategy” section under the Transportation Mode Share 2035 Vision within this TMP, Page 121)
- Work Patterns
  - Encouraging flexible work hour programs
  - Encouraging telecommuting programs
  - Encouraging commuters to use ridesharing programs
- Land Use
  - Implementing land use or zoning controls in order to create mixed use neighborhoods
  - Implementing growth management restrictions
  - Adopting effective mitigation policies that encourage multimodal development
  - Implementing incentives for high-density developments (infill and densification)

Traffic Operations Strategies: strategies that focus on improving the current transportation system usually through the use of modern technologies such as Intelligent Transportation Systems (ITS).

- Causeways Operations
  - Metering traffic onto freeways
  - Including reversible commuter lanes
  - Improving access management
  - Providing movable median barriers for added capacity during peak
  - Bus-only shoulders
- Arterials, Collectors, and Local Roads Operations
  - Optimizing signal timing
  - Restricting turns at key intersections
  - Performing geometric improvements to roads and intersections
  - Converting streets to one-way pairs
  - Providing transit signal priority
  - Redesigning local streets with traffic calming elements
  - Applying road diets
- Other Operational Strategies
  - Improving traffic incident response
  - Implementing traveler information systems
  - Anticipating and addressing special events
  - Improving freight management (see “Freight Management” section under the Transportation Mode Share 2035 Vision within this TMP, Page 127)

Road Capacity Strategies: When all other options have proven to be ineffective the base capacity of the roadway network may need to be increase by adding new through lanes, limited access facilities, or redesigning specific bottleneck at intersections. These strategies are normally associated with higher capital costs and adverse environmental consequences.

- Constructing new high-occupancy vehicle (HOV) or HOT lanes
- Removing bottleneck
- Intersection improvements
- Center turn lanes
- Overpasses or underpasses at congested intersections
- Closing gaps in the street network
- Adding travel lanes on major freeways and streets (including truck climbing lanes on grades)
- Add new connections between landmasses (i.e. bridges)



Parking

Parking, in an urban context, is much more than pavement markings on an asphalt surface, parking is a technical and sophisticated business that is ingrained to everyday transportation trips. Over the years parking has evolved into a central part of the design and livability of a city's environment. Without adequate parking management every mode of transportation is affected. Roadways become more congested due to drivers not finding available spots, consequently transit is delay due to the same traffic congestion and aggressive drivers may potentially block any advantages given to transit (i.e. parallel parking on bus lanes or on queue jump lanes near intersections). Frustration over not finding unoccupied parking may also translate to reduced pedestrian and bicyclist safety. In addition, effective parking management results in a public service that is affordable, sustainable, and most importantly safe. It is important to understand the overall parking supply and demand of a given area before determining what type of parking strategy needs to be employed. For this reason the City of Miami Beach has engaged Walker Parking Consultants in order to analysis the existing parking conditions throughout the City. A summary of the studies performed by Walker may be found on the section "Parking within the City" under Existing Conditions of this TMP, Page 50.

Developing a Parking Strategy

In its Strategic Parking Plan of 2010, the City of Denver, Colorado, identified different factors that determine a motorist's choice of parking location and facility. These factors are summarized in **Table 29**. Location and convenience are primary decision factors because they depend on the surrounding land use. Hence, it is also appropriate to consider the optimal location of parking per activity type and duration when developing a strategic parking plan. ***Figure 56*** displays the relationship between the location of parking, duration of parking, and type of activity performed for which parking is needed.

Table 29: Parking Facility Choice Types (2010 Denver Strategic Parking Plan)

Decision Factor	On-Street Facility	Off-Street Facility
Location	On-street parking, if available, is dispersed geographically throughout an area and may be closer or further from any single use depending on availability.	Off -street parking is concentrated in a single facility and may or may not be public or dedicated to one use.
Convenience	If parking is widely available, users will likely be able to park close to their destination. In situations where parking is in high demand and street spaces are not readily available, street parking may be perceived as inconvenient.	Dedicated parking attached to a single use may not be open to the general public. Parking in a structure may be perceived as inconvenient.
Visibility and Information	Since on-street parking is dispersed, users can easily assess parking options without altering driving path but may cruise multiple blocks looking for parking. Time restrictions are not always readily visible while driving.	Users may be unfamiliar with the price, time restrictions or public nature of a structure or lot and, without visible signage, may be reluctant to turn into the lot or structure.
Safety	Areas with good pedestrian lighting and lots of activity have fewer safety concerns associated with on-street parking. Some users, however, may not feel comfortable parallel parking on busy streets. Others may not feel comfortable parking in areas that feel unsafe or have less desirable uses.	Underground garages and large or poorly lit structures can be perceived as unsafe by users. If so, these facilities may only be used if other parking is unavailable. If a structure is well designed and patrolled, it may be perceived as safer than on-street parking.

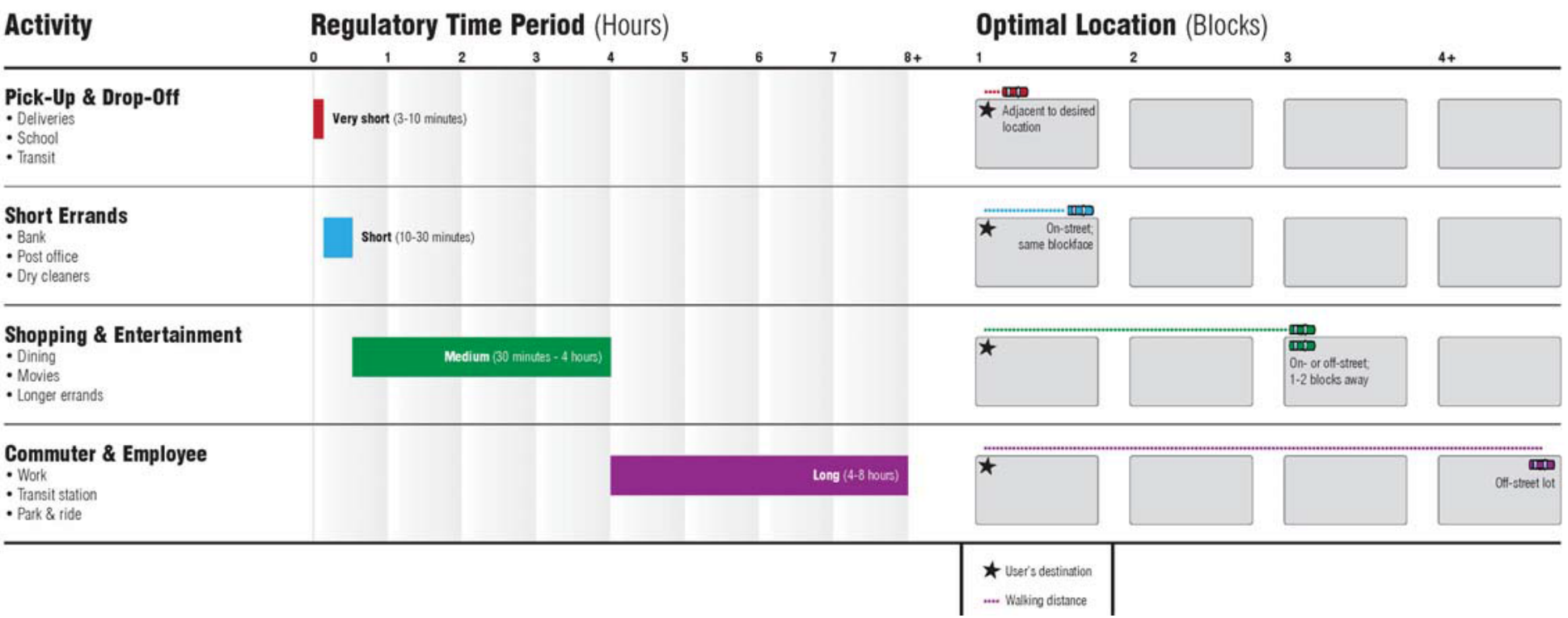


Figure 56: Relationship between Parking Location, Parking Duration, and Activity Performed (2010 Denver Strategic Parking Plan)

ON-STREET PARKING BENEFITS THOSE QUICK TRIPS such as deliveries and quick corridor specific errands. By providing parking in front or within several feet of a location, users performing time-restricted activities may efficiently park and quickly reach their destination. As opposed to off-street parking, on-street parking usually does not require additional right-of-way or parcel purchase since it simply provides the space in form of a lane within the public roadway. Off-street parking requires land and/or development of some type, investments which are costly within the premium realty of the City. One disadvantage of ON-STREET PARKING, however, is that ONLY A FEW PARKING SPACES may be ALLOCATED towards one land use; hence a business is limited to a few customers that park close to the entrance and may be unattractive to those parking a farther away.

In addition, roadway right-of-way is also a precious commodity that has to be shared between different travel modes and may be more beneficial to allocate that space towards safety and mobility improvements. Furthermore, for dense urban areas, such as the City of Miami Beach where parking is in short supply, on-street parking may seem undesirable for motorist due to difficulties associated with parking on congested or busy corridors. THREE TYPES OF ON-STREET PARKING FACILITIES EXIST and allow for different advantages when it comes to convenience and safety. On-street parking may be provided as PARALLEL PARKING SPACES, 60° PARKING SPACES, OR 45° PARKING SPACE; of which the second and third options are variations of angle parking. Parallel parking is the most widely used on-street parking facility because it minimizes the use of street cross-section, allowing this facility to fit on urban streets where constraint right of way exists. Angle parking, on the other hand, occupies more of a street's cross-section but fits a greater quantity of cars within a city block. Angle parking also requires more maneuvering space for drivers to be able to park and resume driving conditions. In addition, this type of on-street parking facility is more user-friendly, results in quicker parking turnover, and may be used as a traffic calming design element. ***Figure 57*** illustrates the basic difference in space requirement between parallel parking and angle parking.

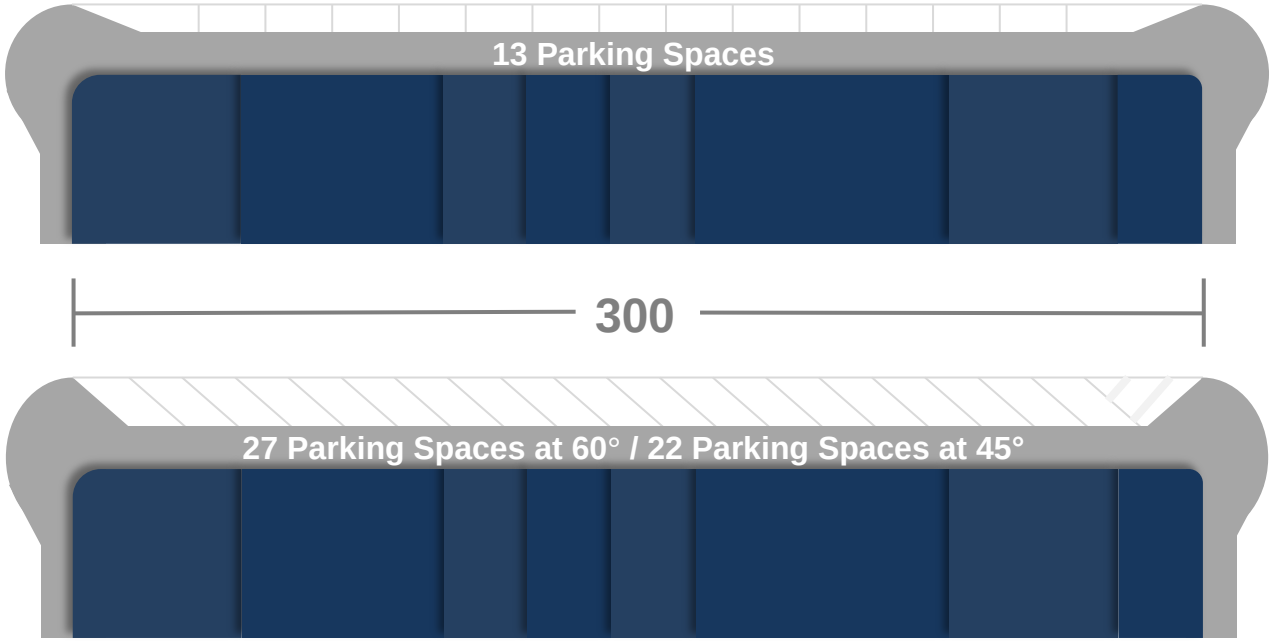


Figure 57: Space Requirements: Parallel Parking vs Angle Parking

On the other hand, TWO TYPES OF OFF-STREET PARKING FACILITIES EXIST: PARKING LOTS AND PARKING GARAGES. A parking garage concentrates multiple parking spaces into one location allowing for appropriate parking supply within a small footprint. Of the existing City-owned parking spaces, 70% are provided within ten garages which is a great attest of the capabilities of parking garages. In essence, a parking lot accomplished the same purpose as the parking garage, however the intensity of concentrated parking spaces is much less and so is the associated costs of building a lot versus a garage. In general, providing off-street parking is costlier than providing on-street parking lanes because land parcels need to be bought and more refined design and construction method are required. However, where the need for vast amounts of parking is present, off-street parking facilities provide the best solution. One of the BENEFITS OF CONCENTRATING PARKING IN A POINT is that a RADIAL CAPTURE OF LAND USE near the parking facility is achieved. In other words, people going to businesses and residences within a certain radius from the parking garage will find the facility convenient to park in and walk to their desired destination. ***Figure 58*** displays an example of the concept of radial capture for the parking garage Lincoln 1111. Off-street parking facilities also achieve to move parking related traffic from roadways into confined lots or structures. This avoids delays caused by those MOTORISTS CIRCLING AROUND BLOCKS looking to find an empty on-street parking space, which according to research perform by FHWA contributes to approximately 30 PERCENT OF THE CITY'S DAILY CONGESTION. Parking provided off-street also has the potential to avoid double parking from people performing pick-ups, drop-offs, and/or quick errands.

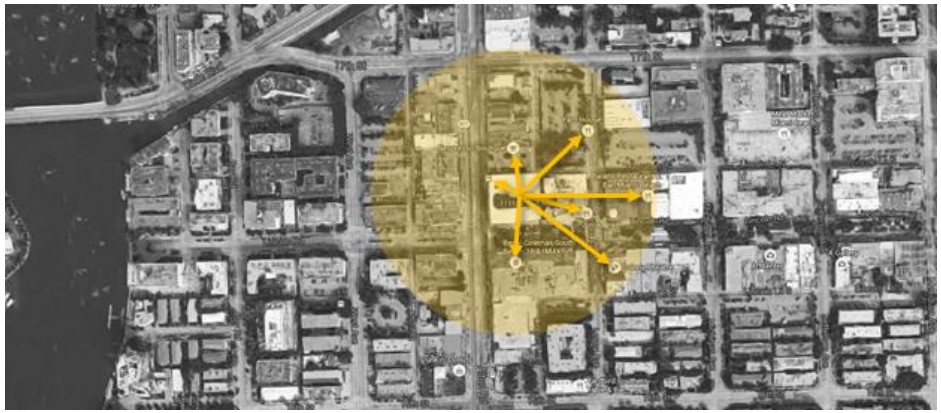


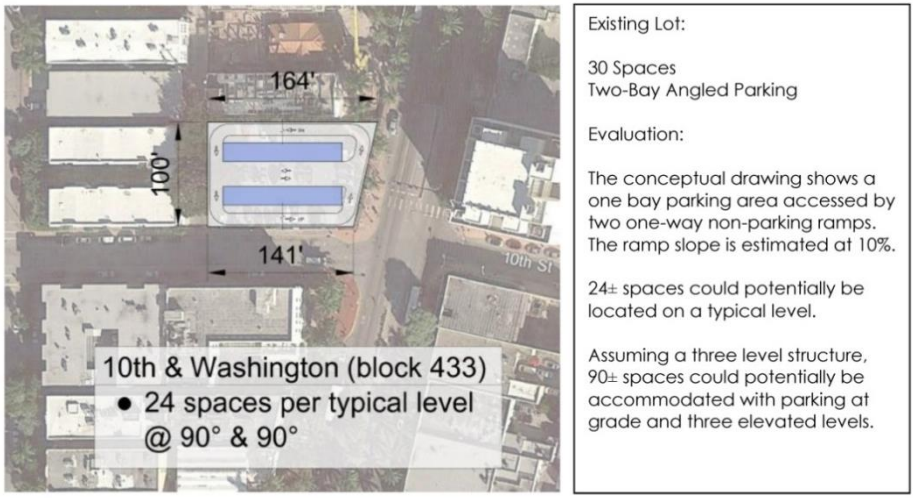
Figure 58: Radial Capture of Lincoln 1111

Recommended Facilities by Walker Parking Consulting

The Walker Study Supplemental Report identified opportunities for potential parking facilities on the south and middle regions of the city (***Figures 59 – 60***). These facilities vary in size, location, and number of parking spaces provided and were provided on zones where parking demand exceeds 85% of existing available parking (this threshold is considered as the demand a which users would experience difficulty in finding parking). No parking facilities were recommended on north beach because no specific location was identified to be suitable in order to accommodate a parking garage or lot. For more detail on these locations please refer to the supplemental reports prepared for the city in 2015.

South Beach

1. Miami Beach Lot P13 – 10th Street and Washington Avenue
2. Miami Beach Lot P16 – 13th Street and Collins Avenue



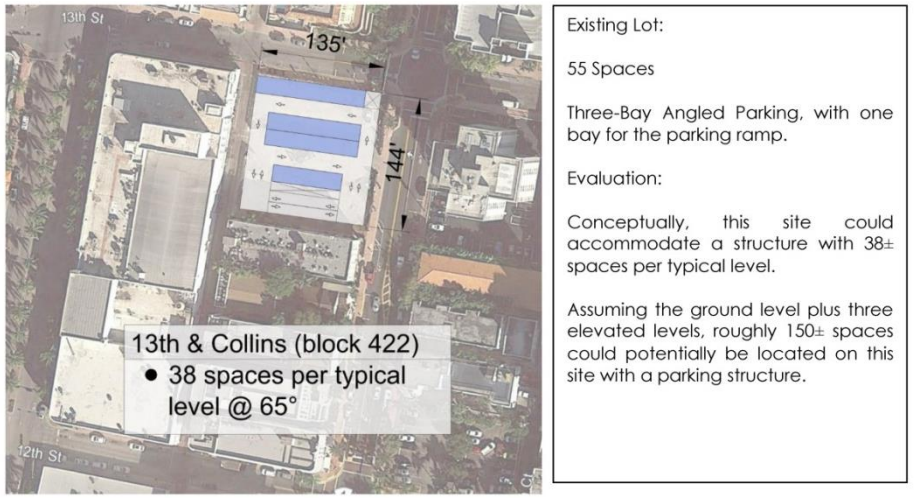


Figure 59: Walker Studies Recommended Parking Garage Locations on South Beach

Middle Beach

1. Miami Beach 71 Surface Lot
2. Miami Beach 63 Surface Lot
3. Miami Beach 55 Surface Lot

Figure 60: Walker Studies Recommended Parking Garage Locations on Mid Beach

The Walker Study Supplemental Report also recommended specific parking management strategies for the City. For more details on these strategies please refer to the Supplemental Report. These are as follows:

- Incorporate Dynamic Wayfinding for Parking
  - Real-time electronic parking availability signage at or near off-street parking facilities directs users to available parking spaces.
  - The City's app should be updated with the provided parking information to enable planned trips with a "park-once" mentality.

Figure 61: Real-time Electronic Parking Availability Sign

- Add centralized city parking facilities as a measure of managing supply

Figure 62: Ballet Valet Parking Garage

- Develop a car sharing program for residents

- A car sharing program reduces parking demand within the City by allowing registered residents to rent privately owned vehicles by the day or by the hour. This reduces the amount of vehicles owned within the City by potentially substituting 10 vehicles owned by 10 different households with a single shared vehicle; consequently reducing the amount of parking needed as well.

Figure 63: Dedicated Car Share Parking Space

- Expand the existing residential parking permit program
  - Residential parking zones restrict normally unrestricted on-street parking spaces for legitimate residents only. By establishing these zones through a voting process of the residents, this program may reduce the amount of parking spaces within residential areas taken by spillover demand from nearby commercial areas. Hence, this program may allow residents to park undisturbed while parking demand for commercial areas is mitigated through the implementation of other strategies.

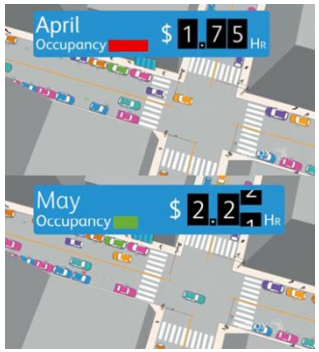
Figure 64: Existing Residential Parking Zone Sign

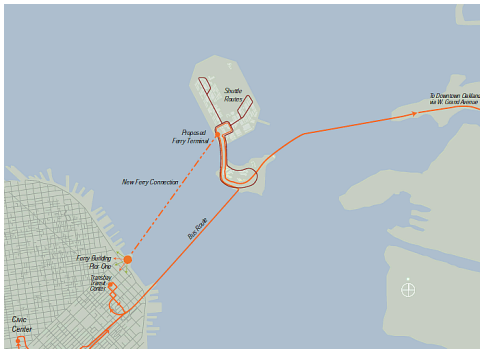
- Unbundle parking fees for residents

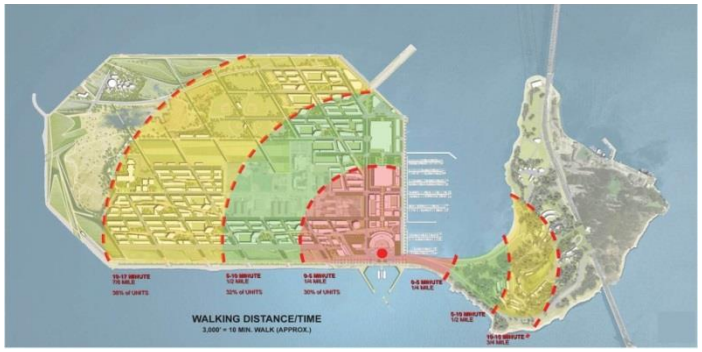
- This strategy aims at separating apartment/house leasing contracts from including parking in order to better quantify the true value of each parking spaces provided. Hence, by offering parking spaces and apartment/house leasing contracts separate, parking demand may be managed through pricing which may sway people into trying alternative modes of transportation instead.

- Pricing Adjustments
  - Pricing adjustments were detailed in the Walker Study for each region of the City in order to encourage quick turnovers and manage demand accordingly. These pricing adjustments are time sensitive and location sensitive, hence they may not apply in the future when land use and demand may change.

OTHER MEASURES AVAILABLE TO MANAGE PARKING ARE PRICING STRATEGIES. A recurring strategic parking pricing model is responsive to fluctuations in parking demand and compatible with existing parking technologies. A prime example of application of this model is the city of Seattle, Washington. Since 2011 Seattle has implemented the Performance-Based Parking Pricing Program which regulates neighborhood parking rates, hours, and time limits by measures of occupancy and is evaluated and corrected annually. Another more assertive model would be a recurring congestion pricing system that surcharges users of public roadways to reduce congestion. This model burdens single-occupancy vehicles in order to make multi-modal transportation a more favorable option. Locally, the I-95 Express Lanes in Miami-Dade are an example of congestion pricing. Nationally, the city of San Francisco, California is currently implementing a trial system on Treasure Island in which residents will be given mandatory transit passes, alternative modes of transportation such as ferries and buses will be favored, and motorists will have to pay parking fees and ramp metering in order to mobilize within the island.







Section Sources:

1. Congestion Management Process: A Guidebook (FHWA), April, 2011 (http://www.fhwa.dot.gov/planning/congestion_management_process/cmp_guidebook/)
2. Congestion Management Process 2009: CMP Toolbox, New York Metropolitan Transportation Council (http://www.nymtc.org/project/CMS/2009_CMP_files/CMP%20Toolbox.pdf)
3. Atlanta Regional Council Congestion Management Process, July, 2006 (http://www.fhwa.dot.gov/planning/congestion_management_process/case_studies/arc.cfm)
4. Performance-Based Parking Pricing Study Final Report, City of Seattle Department of Transportation, August, 2011 (http://www.seattle.gov/transportation/parking/docs/SDOT_PbPP_FinRpt.pdf)
5. Treasure Island Development Authority, City & County of San Francisco (http://sftreasureisland.org/transportation)

FREIGHT MANAGEMENT

As part of a comprehensive transportation system and a desirable sustainable growing economy, FREIGHT LOADING AND DELIVERY MANAGEMENT have to be incorporated into transcendent City plans so that roadway designs, transportation planning, and City developments all work in concordance to IMPROVE THE MOBILITY, CONNECTIVITY, AND ECONOMY OF THE CITY. The City of Miami Beach is home to renowned commercial locations, cultural centers, and hotels which benefit from and depend on efficient delivery management system. Multiple strategies for managing freight exist; however, the City is an urban environment that does not handle high volumes of heavy trucks making some strategies inappropriate for Miami Beach. Hence, the following strategies have been identified as appropriate for the City.

Freight Corridors and Freight Corridor Program

Understanding that freight delivery is an essential service with unique transportation challenges, freight corridors throughout the City should be identified and classified as so. This classification will allow for the implementation of a FREIGHT CORRIDOR PROGRAM that evaluates existing corridors to improve truck accessibility and mobility. This program could include improvements such as:

- Removal of on-street parking at key locations
- Relocation of utilities
- Installation of signs (truck wayfinding signage)
- Provision of truck queue lanes/holding lanes at major access points
- Provision of loading bays
- Signal control for proper traffic gaps and vehicular safety

This effort should potentially DEVELOP, MAINTAIN, AND UPDATE AN INVENTORY of known obstacles identified by the trucking community, maintain an inventory of height limitations for infrastructures/utilities facing truck operations, list of large delivery generators within the corridor, and maintain and publish a LIST OF TRUCK RESTRICTIONS throughout the City for the longevity of all bridges throughout. Freight corridors would prove essential in alleviating traffic congestion, improving delivery operations, and locating future/existing FLZ and ALZ. The cost of planning and implementation may vary depending on the type and length of each corridor and generally tend to be medium to high[1]. **Table 30** displays the advantages and disadvantage of implementing a freight corridor program and which City corridors could potentially be studied in more detail for the implementation of such program.

Table 30: Freight Corridor Program Advantages and Disadvantages

FREIGHT CORRIDOR PROGRAM	Advantages	• Enhances safety • Reduces traffic congestion • Reduces infrastructure damages
	Disadvantages	• Discourages other modes of transportation (transit, bike, etc.) • May require medium to high capital investments
POTENTIAL CORRIDORS	• SR 907/Alton Road from 41st Street to Michigan Avenue • Collins Avenue from 5th Street to 41st Street	

Truck Routes

Truck restrictions and truck corridor improvements work in synch with potential truck routes. Truck routes may be defined throughout the City by establishing paths for delivery and commercial vehicles along certain corridors in concurrence with the locations of existing and future FLZ and ALZ. By defining specific roadways for these routes, any future improvements on the roadways will have to consider certain accommodations for truck traffic.

The DEVELOPMENT OF TRUCK ROUTES REQUIRES CAREFUL PLANNING and should consider a variety of elements: freight movement patterns, origins and destinations, characteristics of specific corridors (heavy vehicle volumes etc.), and land use patterns. Costs associated with the development of truck routes include substantial stakeholder coordination (especially with all the major roadways within the City being state roads), installation of guide signs, and strict enforcement. Pavement design is of particular interest for corridors served by truck route due to increased wear and tear from higher density of heavy vehicles.

A GOOD CASE TO STUDY regarding the development and/or improvement of truck routes within an urban environment is the one from NEW YORK CITY. In a four-year effort NYCDOT embarked on the development of the *Truck Route Management and Community Impact Reduction Study;* and through this study, the City performed an extensive analysis of the roadway network and developed a set of recommendations to improve efficiency of goods movement through its five boroughs. The recommendations included routing modifications, transportation policy changes, roadway signage improvements, enhanced enforcement, and educational initiatives.

By completion of this effort by NYCDOT, two truck routes were modified: a portion of the truck route network in the Bronx and one in Brooklyn had been realigned. The realigned truck routes improved the efficiency of goods movement and removed truck traffic from residential neighborhoods[2]. ***Figure 65*** shows an example of some of the material produced by NYCDOT as part of an educational initiative to promote citywide truck routes.

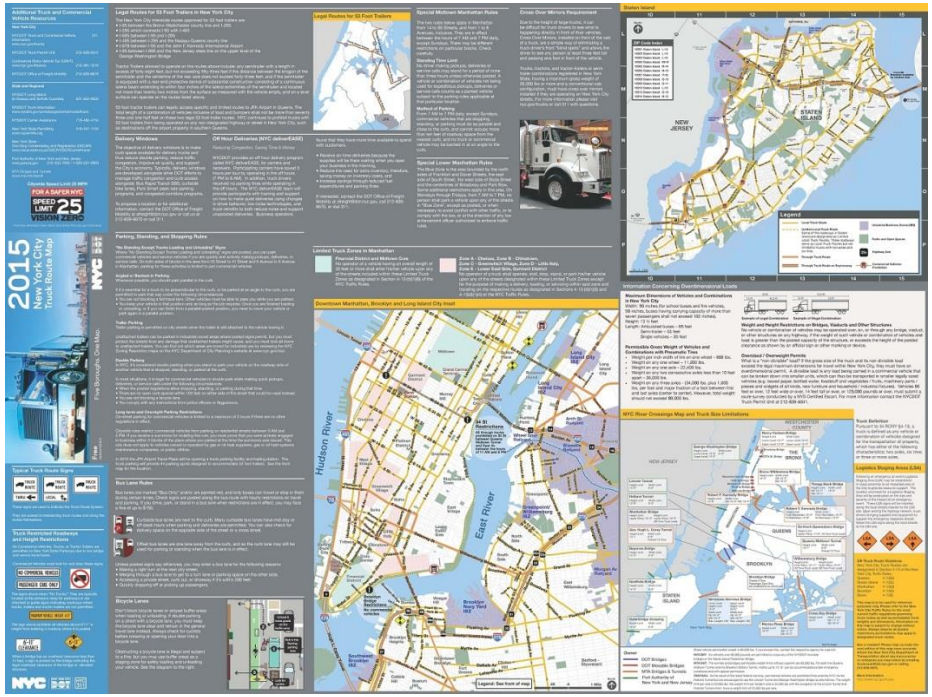


Figure 65: Truck Route Informational Guide Example (New York City)

Additionally, developing strategic truck routes requires acquisition and monitoring of specific data. These data may include elements such as vehicle dimension and weight restrictions, land use, mobility (volume to capacity ratio), truck origin and destination forecast, accident data, truck summonses issued, truck-generating facilities and areas, and stakeholder issues[3]. As an example of data that should be considered, ***Figure 66*** displays the current truck volumes on the majority of the roadways within the City of Miami Beach[4]. Lastly, **Table 31** shows the advantages and disadvantage of implementing a truck route development/improvement program and which City corridors could potentially be studied in more detail for the implementation of such program.

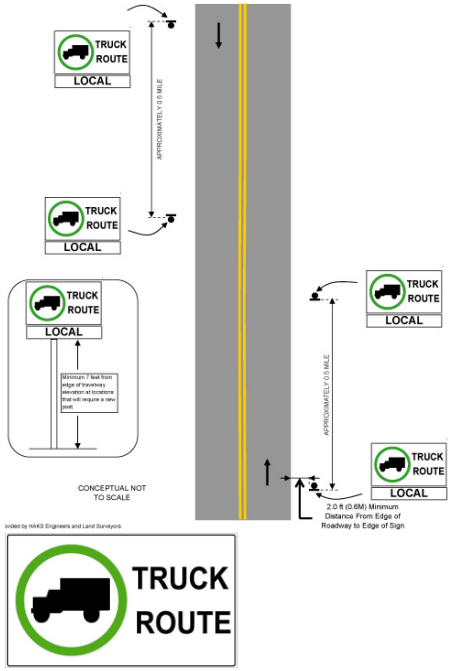
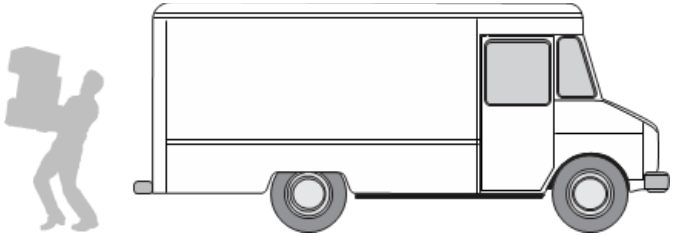


Figure 66: Freight Corridor Wayfinding Signage Example (New York City)

Table 31: Truck Routes Program Advantages and Disadvantages

TRUCK ROUTES	Advantages	• Enhances safety • Discourages unnecessary truck movement in sensitive areas • Reduces infrastructure damages • Informs carriers about geometric and structural conditions of the route network • Enhances livability
	Disadvantages	• High probability for unintended consequences: ▪ Increase operational costs ▪ Increase vehicle-miles traveled • Challenging to ensure commercial accessibility • Requires proper communication, education, and enforcement • Requires proper coordination between jurisdictions
POTENTIAL CORRIDORS		• SR 907/Alton Road from 41st Street to Michigan Avenue • Collins Avenue from 5th Street to 41st Street



Truck Restriction Zones

Truck restrictions in certain areas to avoid potential noise, safety, and traffic congestion issues should be part of the effort of creating and maintaining a livable community and an efficient multi-modal transportation network within the City of Miami Beach. Covered under Miami-Dade County policies are the restrictions for Category 3 vehicles, which are all other vehicles not considered recreational or exceeding 20 feet in length or eight feet in height to be stored within a residential area. However, TRUCKS WITHIN THE CITY MAY STILL NEED TO BE RESTRICTED FROM SPECIFIC CORRIDORS that are not necessarily within residential areas as a measure of maintaining adequate levels of service throughout that corridor. Vehicle size and weight restrictions require careful planning that considers freight movement and land use in certain target areas. A full analysis should be conducted of possible positive and negative outcomes for the entire freight system, not just the targeted area. Cost associated with TRUCK RESTRICTIONS includes enforcement by local authorities, adequate signage, and STAKEHOLDER COORDINATION.

Exiting truck restrictions set by the State of Florida are established under the 2015 Florida Statute s. 316.515. According to this statute, semitrailers may operate on all public roads except for highways on the tandem trailer truck highway network, public roads deemed unsafe, or roads on which such longer vehicles are determined not to be in the interest of public convenience. In a similar manner, tandem trailer trucks may operate on all public roads of the State of Florida except for restricted residential neighborhood streets, or streets and roads deemed unsafe according to an engineering analysis, provided that the restrictions are consistent with the provisions of the statute. The Florida Department of Transportation (FDOT) has developed safety and engineering standards to be used by all jurisdictions when identifying public roads and streets to be restricted from tandem trailer truck operations. All restrictions, whether for semitrailers or tandem trailer trucks, shall be in conformance with the 2015 Florida Statute s. 316.006, which assigns authority over transportation decision to the corresponding roadway owner. This means that local governments may only set freight restrictions on their ROW as well as FDOT and Miami-Dade County on theirs. No current truck restrictions within the City are identified in the Florida Truck Lane Restrictions Interactive Map provided by the Florida Traffic Incident Management (TIM) (refer to ***Figure 67***).

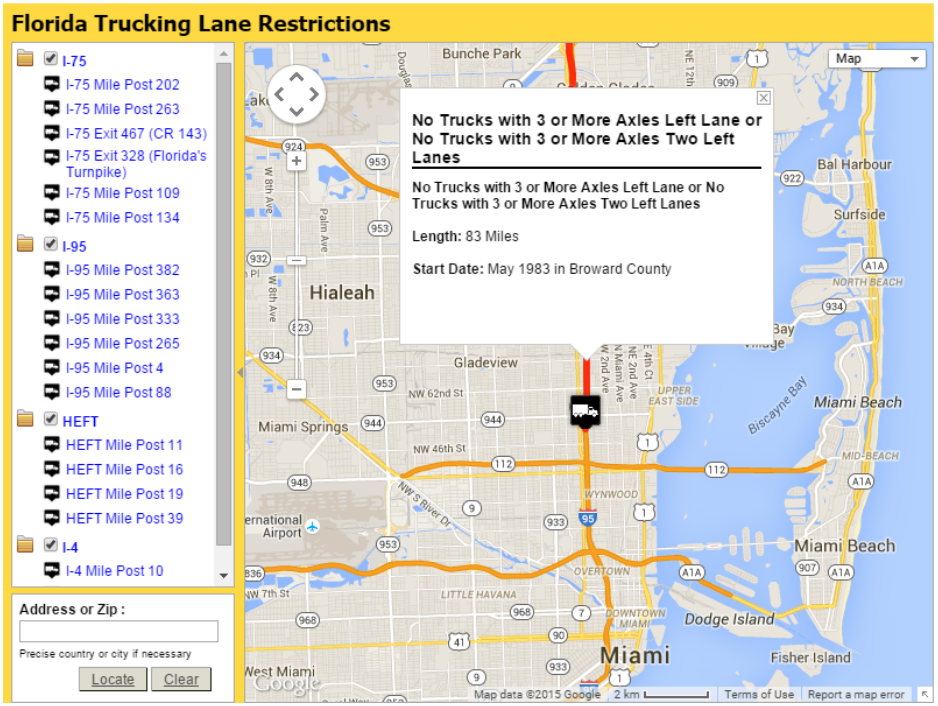


Figure 67: TIM Truck Lane Restrictions Interactive Map

Research shows that regulations are frequently put in place by urban authorities for safety and environmental reasons to prevent vehicles above a certain weight, size (length or width), or number of axles from

using either a particular road or a particular area of several connected roads. Reasons for introducing this type of regulation include:

- A narrow road
- A weak bridge
- A low bridge
- Overhanging buildings
- To improve the amenities of local residents

Since, as previously mentioned, regulations can vary between municipalities. Careful consideration should be given to ensure harmonization of all the interest of the various involved stakeholders[5]. ***Figure 68*** shows an example of a freight restriction area within downtown Seattle, where vehicles over a certain size are prohibited to be during specific time periods. Additionally, ***Figure 69*** depicts examples of signage that may be typically used within this type of areas.

Lastly, **Table 32** shows the advantages and disadvantage of implementing truck restriction areas within the City.

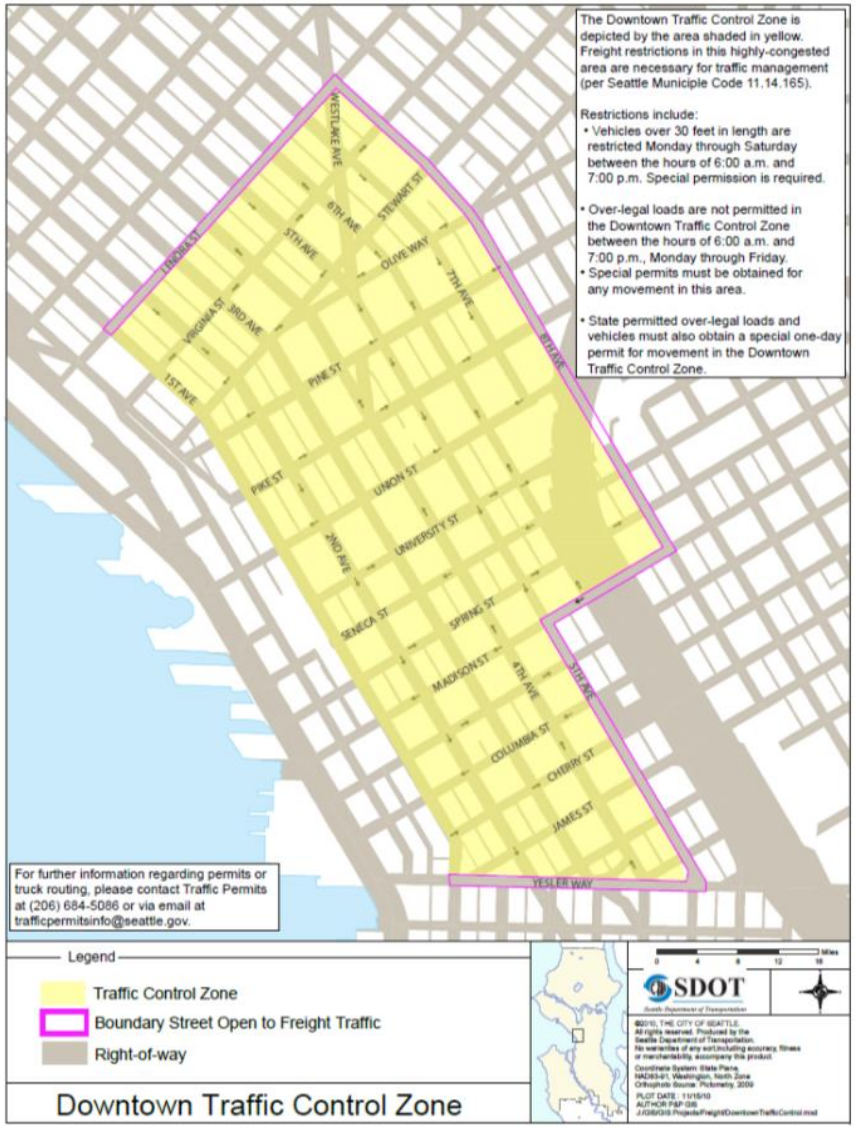


Figure 68: Downtown Seattle Truck Restriction Zone

Figure 69: Truck Restrictions Sign Examples

Table 32: Truck Restriction Zones Advantages and Disadvantages

TRUCK RESTRICTION ZONES	Advantages	• Enhanced safety • Reduced traffic congestion • Improved urban mobility • Reduce infrastructure damages • Reduced noise emissions
	Disadvantages	• Difficult to enforce • High probability of unintended consequences: ▪ Increased truck congestion on other areas ▪ Increased operational costs ▪ Hamper economic activity

Intersection Geometry Analysis and Improvements

To complement designated freight corridors and/or routes or simply areas where roadways exhibit high heavy vehicle traffic, intersection geometry should be analyzed in efforts to improve traffic operations. This may be achieved by DESIGNING CERTAIN INTERSECTIONS with appropriate turning radii, providing swept path width, and relocating traffic control devices/utility poles TO BETTER ACCOMMODATE TRUCKS. Implementation cost varies per location and state/federal design standards may be adopted at minimal costs. This project may also be regarded as a short-term low-cost alternative to implement a Freight Corridor Improvement Plan by simply improving the intersections with high heavy vehicle traffic throughout the City in a logical pattern. **Table 33** shows the advantages and disadvantage of providing improvements to intersection geometries to better accommodate truck movements within the City.

Table 33: Intersection Geometry Improvements Advantages and Disadvantages

INTERSECTION GEOMETRY IMPROVEMENTS	Advantages	• Enhanced safety • Reduced traffic congestion • Reduce infrastructure damages • Low to no probability for unintended consequences
	Disadvantages	• May require high to low capital investments • May require moderate implementation times • May conflict with pedestrian traffic • May impact private sector locations

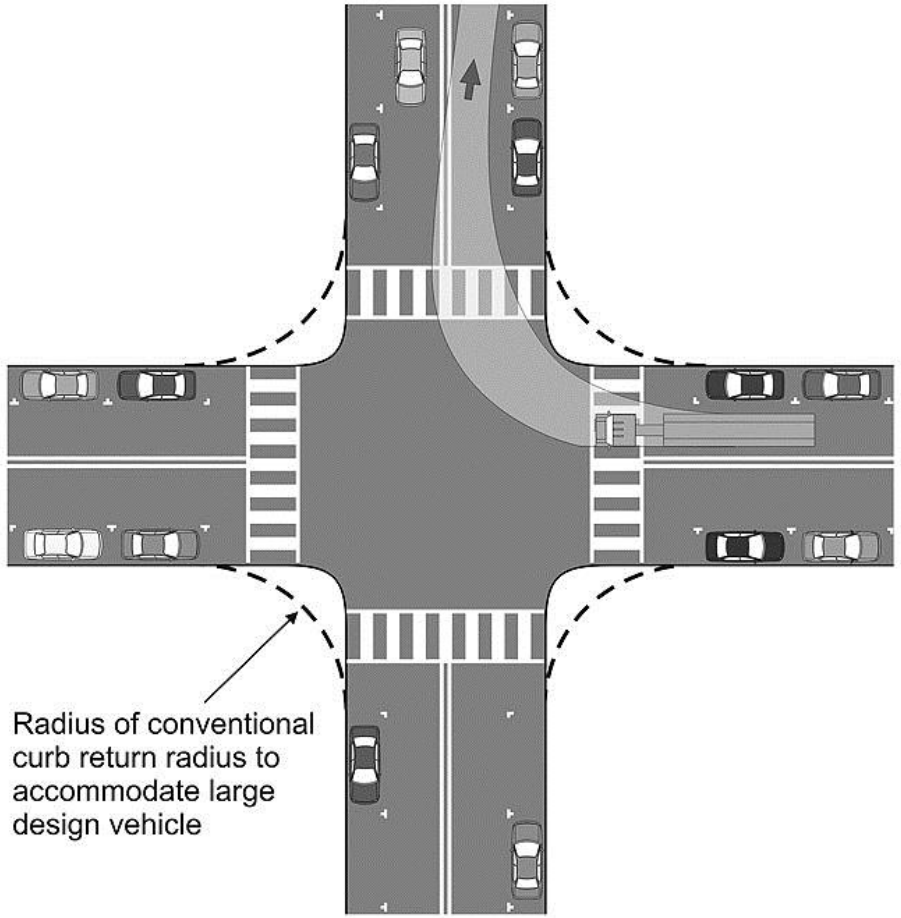


Figure 70: Truck Turning Movement

Loading Zone Accommodations

Not all FLZ and ALZ throughout the City completely accommodate delivery activities. A minor and helpful physical improvement to loading zones is the addition of sidewalk ramps for handcarts and forklifts. These ramps will FACILITATE LOADING AND UNLOADING OF TRUCKS, therefore providing shorter and more efficient deliveries. Multiple efforts are required to plan, update design standards, zoning strategies, and inform involved stakeholders (real estate developers, landlords, etc.). However, IMPLEMENTATION OF SIDEWALK RAMPS is cheap if no additional sidewalk space is required to meet design standards. ***Figure 71*** graphically depicts a typical sidewalk ramp. Other treatments may be needed when bicycle lanes are present such as the use of a buffer area as a refuge island from the bicycle lane (refer to ***Figure 72***). Further accommodations may include building retrofitting to update older buildings and include requirements for loading accessibility in new developments. This effort is more costly and benefits will have to be determined through further detailed analysis. Lastly, **Table 34** shows the advantages and disadvantage of providing accommodations for freight loading zones throughout the City.

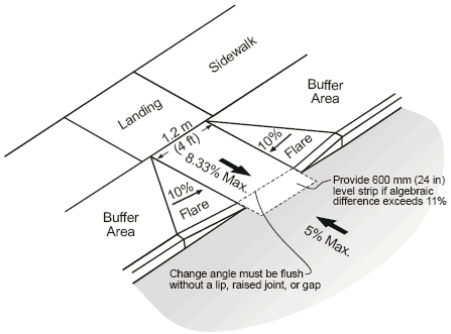


Figure 71: Typical Sidewalk Curb Ramp

Table 34: Loading Zone Accommodations Advantages and Disadvantages

LOADING ZONES ACCOMMODATIONS	Advantages	• Improves delivery efficiency • Environmental sustainability • Enhances safety • Improves accessibility (May be used for ADA compliance) • Low to no probability for unintended consequences
	Disadvantages	• May conflict with pedestrian traffic

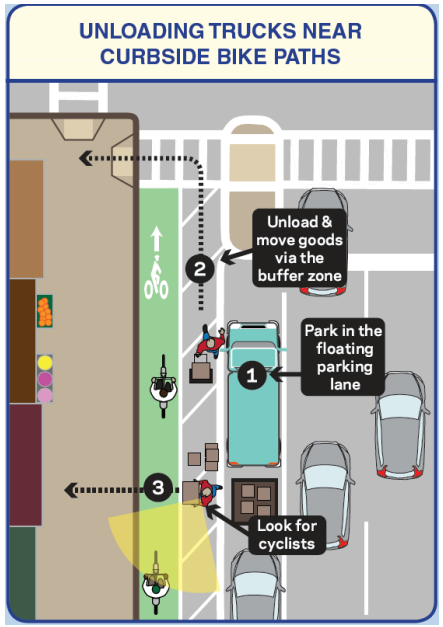


Figure 72: Loading Zone and Bike Path Buffer Separation Example

Colored Curb Program

The City of Los Angeles, City of San Diego, and the City of San Francisco all currently have Colored Curb Programs which ALLOW MOTORISTS TO QUICKLY DETERMINE THE TYPE OF CURBSIDE PARKING PROVIDED through visual inspection of the color of the curb. These programs are necessary in these cities due to the different parking/loading zones they have established: green zones are for short-term parking (generally less than 10 minutes), red zones are "No Parking" zones installed at intersections, near fire hydrants, driveways, curb ramps, and bus stops, white zones are only for passenger loading/unloading of 5 minutes, yellow zones are only for active commercial loading/unloading, and blue zones are designated for disabled parking permits. MERCHANTS AND RESIDENTS SUBMIT a non-refundable APPLICATION that results in a town hall meeting to approve the respective zone they wish to have installed near their property. These zones may be properly adopted for the City of Miami Beach and implemented in identified freight corridors. Since the FLZ have expanded to include six (6) different "types" with distinct hours of operation, COLORED CURBS MAY BE USED TO HELP TRUCK DRIVERS IDENTIFIED THE LOADING ZONE TYPE as opposed to guiding all motorists on the type of curbside parking zone. This program would be relatively simple to implement, low in cost, and would be easy to amend to the existing loading zone policies. ***Figure 73*** provides a sample image of the types of curb colors defined in the City of San Francisco, and ***Table 35*** shows the advantages and disadvantage of implementing a colored curb program within the City of Miami Beach.

Figure 73: Colored Curb Program Example

Table 35: Colored Curb Program Advantages and Disadvantages

COLORED CURB PROGRAM	Advantages	• Improves delivery efficiency • Environmental sustainability • Low to no probability for unintended consequences • Improves City organization of FLZ "types"
	Disadvantages	• May not prevent inadequate loading from taking place • Enforcement required

Interactive Freight Map

To facilitate future freight planning endeavors and to consolidate current and upcoming freight management efforts from the City, this TMP has created a comprehensive freight map that displays existing loading zones that have been mapped thus far as well as the existing and potential designated truck routes and/or corridors.

Figure 74: Freight Management Interactive Map Sample

Section Sources:

6. Freight Mobility Strategic Action Plan, Seattle Department of Transportation (SDOT), June, 2005
7. http://www.nyc.gov/html/dot/downloads/pdf/execsum.pdf
8. http://ops.fhwa.dot.gov/publications/fhwahop10019/truckrtmgmt.htm#8b
9. http://www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html
10. http://www.bestufs.net/download/BESTUFS_II/good_practice/English_BESTUFS_Guide.pdf

ENSURING IMPLEMENTATION

In order to achieve the City's 2035 strategic transportation mode share vision, policies have to be set forth in order to remind, guide, and help decision makers to pass legislature that promotes multimodal transportation and rescind all of Miami Beach's residents and visitors preconceptions about travelling on transit, bikes, and on foot. The City's desire to weave together the CONCERNS OF COMMUNITY AND ENVIRONMENTAL HEALTH WITH TRANSPORTATION PLANNING should be harnessed through concrete measures that ensure implementation in order develop the City into a connected vibrant livable community.

Recognizing that the City already enjoys of OUTSTANDING TRANSPORTATION POLICIES within its Transportation Element that encourage the development of a sustainable, efficient, and attractive transportation system, this TMP proposes to modify and set new policies that will provide necessary support for implementing any selected transportation strategy.

Updating and Setting New Policies

Legend

- Existing Policy
- Suggest Policy or Policy Modification

Non-Motorized Transportation

- **Policy 1.5: Multi-modal Level of Service**
  Roadway level of service is insufficient as a measure of multi-modal mobility in a mature city with land use intensities, mixed uses and the economic vitality such as Miami Beach. The city shall attempt to shift from roadway capacity and level of service to an overall mobility system capacity and level of service.
  - **Policy 1.5.1**
    The City of Miami Beach should consider creating and maintaining a pedestrian and bicycle count warehouse of collected data regarding pedestrian and bicycle volumes, level of service, peak hours, and location.
  - **Policy 1.5.2**
    The City of Miami Beach should consider developing permanent pedestrian and bicycle count stations using any available technologies at key locations where pedestrian and bicycle activities have been historically high (i.e. similar to FDOT permanent vehicular count stations that allow for better design due to reliable data collection and interpretation)
  - **Policy 1.5.3**
    The City of Miami Beach should consider developing methodologies to determine pedestrian and bike level of service and existing facilities remaining capacity to

standardize and analyze design procedures for new pedestrian and bike facilities

- **Policy 5.6: Bicycle Storage**
  The City shall establish guidelines for the provision of short term and long term bicycle parking areas, including bicycle racks for multifamily residential areas, commercial areas, transit transfer areas, transit stops, and recreational areas. All existing and new garages shall include long-term bicycle parking (bicycle lockers).

- **Policy 5.10: Pedestrian Priority Zones**
  The City shall define and adopt pedestrian priority zones, as described in the Transportation Master Plan and their design standards in order to ensure pedestrians safety, mobility, and accessibility in targeted areas.

- **Policy 5.12: Bicycle Pavement Markings**
  The City shall adopt new pavement markings, presented in the Bicycle and Pedestrian Master Plan (i.e. Bicycle boulevard pavement marking), and study the possibility for implementing colored bicycle boxes at intersections, points of conflicts, and other recommended locations citywide.

Transit

- **Policy 4.4: Enhanced Transit Amenities**
  The City shall coordinate with Miami-Dade Transit to provide enhanced transit amenities, such as bus shelters, intermodal facilities, transfer stations/centers, buses, implementation of bus rapid transit (BRT) along selected corridors, real time transit location information at shelters, exclusive bus lanes, and at intermodal terminals, more comfortable bus seating, and passenger amenities, etc.

- **Policy 4.7: North Beach And Middle Beach Circulators (Local Circulators Systems)**
  The City shall plan, design, seek funding for and implement local circulator systems in North Beach and Middle Beach. The City shall continue to plan and coordinate with Miami-Dade Transit (MDT) and the Florida Department of Transportation (FDOT) to develop a connected circulator system that feeds regional routes and future rail connections.

- **Policy 4.13: Exclusive Transit Lanes Design Guidelines**
  In coordination with Miami-Dade Transit (MDT) and the Florida Department of Transportation (FDOT), the City shall study the possibility of developing guidelines and standards for the construction, and placement, of future transit infrastructure including, but not limited to, the enhanced transit amenities mentioned in Policy 4.4.

Automobiles

- **Policy 6.3: Intelligent Transportation Systems**
  The City shall coordinate with and support FDOT in the pursuit of intelligent transportation systems (ITS), to help manage congestion on facilities within Miami Beach as well as those facilities connecting the city with the mainland transportation system. This may include using various forms of technology, not limited to cameras, and electronic signage, to inform

travelers of the condition of the transportation system, roadway level of service, adaptive signal controls, and availability of parking citywide. Additionally, the City is currently pursuing FDOT independent ITS projects and shall continue to pursue such independent projects to better manage the movement of traffic within the City's transportation network.

- **Policy 6.18: Corridor Safety**
  The City shall undertake an evaluation of the existing transportation corridors in an attempt to enhance safety and optimize mobility for all modes of transportation. In addition, the City should encourage the development of an intersection safety program in which intersections with skewed geometries or high crash intensities are specifically reviewed and analyzed by a traffic engineer to improve safety for all modes of transportation.

- **Policy 9.8: Provision Of Multimodal Amenities**
  Within the City's TCMA's, the City shall require all new major developments and developments applying for new areas, those projects over 5,500 gross square feet, and/or projects that produce over 38 peak hour trips, to submit a Transportation Mitigation Plan which will include strategies to mitigate the traffic generated by the site, and will encourage the use of alternative modes of transportation.
  - **Policy 9.8.1**
    In addition to new major developments, the City shall require all developments, excluding those below, within a ½ mile radius from any roadway segment with a level of service E or F (see adjacent table) to perform and submit a Transportation Mitigation Plan. Developments excluded from performing a Transportation Mitigation Plan are limited to:
    - Single family homes
    - Multi-family homes with less than 15,500 gross square feet (which represents the median gross square footage for approximately 5 single family homes within the City; that is a multi-family home of 5 families)

Table 36: Failing Roadway Segments (Including Existing, 2025, and 2035 Conditions)

Segment Name	Segment Limits	
	From	To
SR A1A/MacArthur Causeway	City Limits	Alton Road
SR A1A/Collins Avenue	5th Street	26th Street
SR A1A/Collins Avenue	71st Street	88th Street
SR A1A/Abbott Avenue	Indian Creek Drive	73rd Street
SR A1A/Indian Creek Drive	73rd Street	88t Street
SR A1A/Indian Creek Drive	41st Street	44th Street
SR A1A/Indian Creek Drive	5800 Block	Abbott Avenue
SR 112/Julia Tuttle Causeway	City Limits	Alton Road
SR 112/41st Street	Alton Road	Collins Avenue
SR 937/71st Street	Dickens Avenue	Collins Avenue
SR 907/Alton Road	Dade Boulevard	63rd Street
SR 907/63rd Street	Alton Road	Collins Avenue

Parking

- **Policy 8.2: Public Private Partnerships**
  The City shall continue to seek public-private partnerships in the development of its parking facilities and intermodal centers. Preferably, these ventures shall encourage off-street parking on centralized parcels that serve multiple land-uses and should prioritize the development of surface parking lots into parking garages.

- **Policy 8.10: Parking Studies**
  The City shall analyze parking supply, demands, and potential strategies to be implemented every 5 years as a measure for determining the success of the city's effort to moving parking from on-street into facilities.

- **Policy 8.11: Parking Strategies**
  The City shall implement the appropriate strategies suggested by the parking studies in order to achieve its vision and encourage multimodal transportation. These strategies/recommendations may include but are not limited to way-finding, electronic signage, new proposed facilities, pricing adjustments, car sharing programs, etc.

- **Policy 8.12: Multimodal Parking Facilities**
  In continuing the effort to develop parking facilities encourage multimodal design elements within new or existing parking facilities such as transfer stations, benches, showers, leased retail spaces, etc. That create a walkable environment and encourage a “park-once and go” mindset.

Freight

- **Policy 12.1: FLZ And ALZ Program**
  The City should continue its effort in developing and determining FLZ and ALZ on all regions of the city and as substitutes for the commercial loading zones where appropriate.

- **Policy 12.2: Colored Curb Program**
  FLZ and ALZ should be classified according to their time restrictions and should be easily identifiable by drivers through a colored pavement program, appropriate signage and way-finding elements.
- **Policy 12.3: Commercial Loading Zones**

  Commercial loading zones should be reevaluated and standardized to serve as compliments to the FLZ and ALZ by providing zones for smaller vehicles, taxis, and/or school drop offs/pick-ups.

- **Policy 12.4: Freight Routing**
  Freight should be routed in a logical way through major corridors by providing loading zones on side streets and alleyways that are serve a route which provides access to commercial and transient residences.

- **Policy 12.5: Freight Amenities**
  The City shall encourage and analyze the potential of providing curb ramps and/or dolly/handcarts/hand trucks on FLZs and ALZs to provide improved access for delivery activities and for quicker loading/unloading.

Multi-Modal Transportation

- **Policy 6.5: Modal Split Analysis**
  The City currently has a transportation mode split of its daily population of 64% private vehicles, 11% mass transit, 10% walking, 5% biking, and 10% others. The City shall strive to achieve its 2035 vision of a transportation mode split of 43% private vehicles, 20% mass transit, 17% walking, 10% biking, and 10% others through support of and implementation of multimodal transportation improvements.

- **Policy 6.7: Prioritizing Multimodal Improvements**
  The City’s transportation master plan has identified priority corridors for each mode of transportation. The City shall abide by these guidelines to prioritize projects along those corridors according to the designated primary mode of transportation. The City shall coordinate with other jurisdictions to follow the set prioritization if a corridor does not fall under City jurisdiction.

- **Policy 6.21: Modal Split Data Collection**

As a tool for accomplishing the desired modal split envisioned for 2025 the city shall perform and retain a series of origin-destination studies in which the modes of transportation used within the city and by different people are recorder. These studies could be performed through surveys of tourist, residents, and commuters provided electronically and capturing a desired sample size.

Concurrency Management Threshold

In reviewing and updating the Transportation Element a critical objective for developing a truly efficient and multi-modal transportation system is the successful implementation of concurrency measures within the City's TCMAs. Of the aforementioned proposed/modified policies, Policy 9.8 under the Automobiles section (Page 144) redefines the threshold for new developments or redevelopments that are required to perform a Transportation Mitigation Plan. A closer look at this policy and the proposed sub-policy follows.

Under the adopted Transportation Element of the 2025 Comprehensive Master Plan the full policy is stipulated as follows:

- **Policy 9.8: Provision of Multimodal Amenities**
  Within the City's TCMA's, the City shall require all new major developments, (those projects over 50,000 gross square feet, and/or projects that increase the number of trips over 100 peak hour trips), to submit a Transportation Mitigation Plan which will include strategies to mitigate the traffic generated by the site, and will encourage the use of alternative modes of transportation. The safety and convenience of all users of the transportation system including pedestrians, bicyclists, transit users, and motor vehicle drivers shall be accommodated and balanced in all types of transportation and development projects and through all phases of all new major developments so that the most vulnerable – children, elderly, and persons with disabilities – can travel safely within the public right of way. Applicable treatments may include, but not be limited to TDM strategies included in Policy 6.2 and TSM policies included in Policy 6.1.

As stated, only projects with a footprint of 50,000 gross square feet or more, or projects that increase the number of generated trips by over 100 peak-hour trips are required to mitigate the additional traffic they produce. The reality of all new development and some redevelopments is that they generate NEW TRIPS WHICH HAVE TO BE ACCOMMODATED WITHIN THE EXISTING PUBLIC INFRASTRUCTURE. If today a roadway is at capacity, the addition of new trips will saturate the roadway and strategies need to be implemented in order to improve operations. Hence, new developments that are large in footprint area, density, and intensity should not be the only developments responsible for mitigating any generated traffic. By requiring new developments and/or redevelopments to perform a Transportation Mitigation Plan the burden of performing an engineering study is transferred to the private sector as opposed to the public sector. CONSEQUENTLY, THIS SAVES TAX MONEY BY FUNDING AN IDENTIFIED TRANSPORTATION STRATEGY/SOLUTIONS AS OPPOSED TO PERFORMING STUDIES TO IDENTIFYING THE BEST TRANSPORTATION STRATEGY/SOLUTION TO DEAL WITH NEWLY GENERATED TRIPS.

Hence new thresholds were identified for the City using relevant data. According to the Housing Element within the 2025 Comprehensive Master Plan for the City of Miami Beach the AVERAGE SQUARE FOOTAGE FOR A SINGLE FAMILY HOME IS OF 3,163. As of 2013, the US Census Bureau QuickFacts for the City identifies that PER HOUSEHOLD THERE IS AN AVERAGE OF 2.04 PEOPLE. FHWA under its 2013 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance, Chapter 1: Household Travel has identified that as of 2009 ONE PERSON MAKES AN AVERAGE OF 3.79 DAILY TRIPS.

IN PROMOTING URBAN INFILL AND DENSIFICATION, single family homes and small multi-family homes have been except from having to prepare a Transportation Mitigation Plan because the amount of probable trips these developments will produce will be INSUFFICIENT TO CREATE ANY SIGNIFICANT CHANGES IN ROADWAY LEVEL OF SERVICE AND TRANSPORTATION DEMAND. For this purpose, a small multi-family home has been defined as household contacting an average of 10 people or 15,500 square foot which would produce an estimated 37.9 daily trips. Any residential development with a footprint greater than 15,500 will begin to have adverse effects to the existing transportation system.

The nature and amount of trips generate by residencies is very different than from those generate by other land uses such as commercial buildings and transient homes (i.e. hotels). These land uses usually create more trips per square footage, therefore, APPLYING THE SAME AREA THRESHOLD TO RESIDENCIES AND COMMERCIAL LAND USE IS NOT APPROPRIATE.

Throughout the City businesses, hotels, restaurants, office buildings, and retail spaces generate more transportation needs than houses and small apartments, especially in the tourist destination that is Miami Beach. Using the INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) TRIP GENERATION MANUAL (8TH EDITION), AVERAGE AREAS GENERATING 38 VEHICULAR TRIPS WERE DETERMINE FOR SEVERAL COMMON LAND USES within the City (See **Table 37**). Using the maximum area calculated, an area threshold for other land use was determined. This area threshold corresponds to a wholesale supermarket with 5,646 SQUARE FEET. For ease of implementation and documentation the area threshold was rounded down to the nearest five hundred; which is 5,500 SQUARE FEET. However, note that the controlling factor for capacity impact determination is the amount of vehicular trips produced, hence, regardless of the footprint area, if a development produces more than 38 TRIPS IT WILL ADVERSELY IMPACT THE TRANSPORTATION NETWORK.

Table 37: ITE Trip Generation Rates per Land Use

ITE Code (8th Ed.)	Description	Units	ITE Weekday Vehicle Trip Generation Rate	Area Required for 38 Generated Trips (Equivalent to 5 Single Family Homes)
310	Hotel A	Occ. Room	8.92	1,406
312	Business Hotel A	Occ. Room	7.27	1,725
320	Motel A	Occ. Room	9.11	1,377
330	Resort Hotel A	Occ. Room	13.43	934
520	Elementary School	KSF2	15.43	2,463
530	High School	KSF2	12.89	2,948
560	Church	KSF2	9.11	4171
561	Synagogue	KSF2	10.64	3,571
610	Hospital	KSF2	16.50	2,303
710	General Office	KSF2	11.01	3,451
750	Office Park	KSF2	11.42	3,327
820	Shopping Center	KSF2	42.94	885
850	Supermarket	KSF2	102.24	372
853	Convenience. Mkt w/ Gas Pumps	KSF2	845.60	45
860	Wholesale Market	KSF2	6.73	5,646
880	Pharmacy/Drug. w/o Drive-Thru	KSF2	90.06	422
881	Pharmacy/Drugstore w/ Drive-Thru	KSF2	88.16	431
934	Fast Food with Drive Thru	KSF2	496.12	77
937	Coffee/Donut Shop w/ Drive Thru	KSF2	818.58	46

Note: A Per City Code a minimum size of 330 square feet per room was used to estimate the size transient residencies (i.e., hotels, etc.); note that this estimation is low since the area only takes into account accommodating rooms and no other hotel amenities

Section Sources:

1. City of Miami Beach 2005- 2007 Year-Based Comprehensive Plan Amendments; Housing Element, Page HE-9 (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCMQFjABahUKEwikk6WmzfTIAhWC_R4KHYXuD_8&url=http%3A%2F%2Fwww.miamibeachfl.gov%2FWorkArea%2FDownloadAsset.aspx%3Fid%3D64027&usg=AFQjCNFCfLzo8oIuPDLwLo_gTibgdPZfPg&bvm=bv.106379543,d.dmo)
2. US Census Bureau State & County QuickFacts Beta 2.0 (http://quickfacts.census.gov/qfd/states/12/1245025.html)
3. FHWA 2013 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance; Chapter 1: Household, November, 2014 (http://www.fhwa.dot.gov/policy/2013cpr/chap1.cfm#body)

PROJECT DEVELOPMENT

6. PROJECT DEVELOPMENT

SHIFTING OUR TRAVEL PATTERNS towards a more sustainable transportation mix will require changes to transportation modal priorities, funding, standards, policies and projects. While ALL FUTURE PROJECTS ARE SUBJECT TO APPROVALS AND FUNDING, and in some cases participation of external agencies, these projects represent current priorities that will help start the shift towards a more sustainable and multi-modal transportation future. However, it's clear that all the variables needed to make any of these projects a reality, are not always readily at hand. THEREFORE, THE SUCCESS OF THESE PROJECTS IS NOT HINGED UPON ANY CHRONOLOGICAL ORDER OR UNFORESEEN TRANSPORTATION NEEDS OF THE CITY MAY HAVE.

Once the analysis of the main City corridors was complete and modal priorities, led by the endorsed hierarchy, were assigned to the roadways; the development of potential transportation projects became a straightforward task. The notion to defining the projects was structured the following way:

- TRANSIT CORRIDORS shall provide exclusive facilities for such mode. This means that the typical section of the roadway should accommodate lanes and/or infrastructure improvements dedicated exclusively for transit, i.e. bus lanes, light rail lanes, enhanced stations, transfer facilities, etc.
- BICYCLE AND PEDESTRIAN CORRIDORS shall provide exclusive facilities and/or enhancements for such mode. This means that the typical section of the roadway should accommodate lanes, markings, signage, and/or infrastructure improvements dedicated exclusively for bicyclists and pedestrians, i.e. enhanced crosswalks, traffic calming improvements, more and safer crossings, adequate signalization and timing, neighborhood greenways, standard bicycle lanes, protected bicycle lanes, etc.

The concept of providing exclusive facilities for these alternative modes of transportation guided the development of the vast majority of the recommended projects. Nonetheless, maintaining the mobility of motorized personal vehicles was not overlooked since they are after all an integral part of an efficient transportation network as well. Thus, in close coordination with the City, various recommendations were made toward capacity improvements for certain identified congested areas. Since, area specific improvements require detailed analysis, most of the recommendations to improve roadway capacity consist of short-term feasibility studies to further define the issues causing congestion within the areas and provide pertinent site improvements. This TMP recommends that ANY FEASIBILITY STUDY that is to analyze and suggest CAPACITY IMPROVEMENTS should do so under a multi-modal scope and under the notion that these improvements will ACCOMMODATE MODES OF TRANSPORTATION OTHER THAN THE PERSONAL VEHICLE, especially when involving TMP defined transit and/or bicycle/pedestrian corridors.

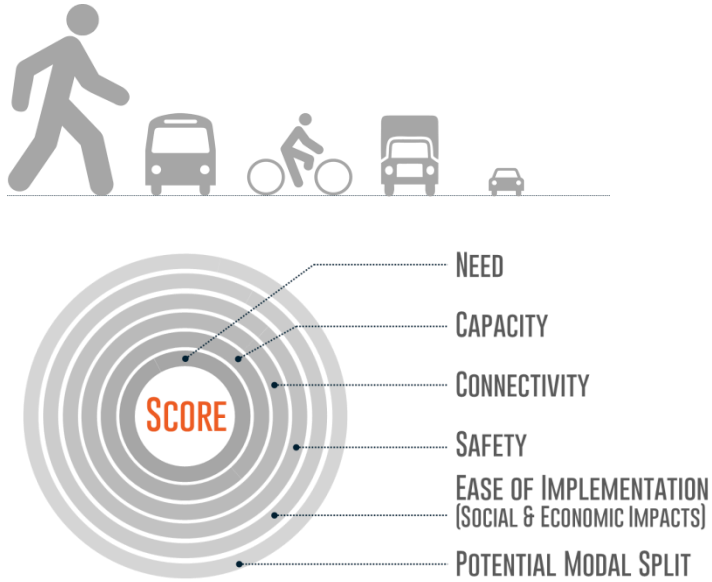
This TMP has created a project bank structured in three categories:

PROJECT PRIORITY 1 PROJECT PRIORITY 2 PROJECT PRIORITY 3

SETTING CRITERIA

While this TMP intends to recommend numerous potential improvements, it is known that certain limitations exist for simultaneous implementation of all of them. Monetary funding being one but also the fact that it is simply irrational as well as physically impossible to improve the City's transportation infrastructure all at once, especially with it being a barrier island with limited access points. Therefore, it is CRUCIAL TO PRIORITIZE potential projects in an orderly manner as TO EFFICIENTLY IMPROVE the transportation infrastructure WHILE OBTAINING as many MEASURABLE RESULTS as possible along the way. As previously shown, the TMP recommended projects were prioritized in three categories, and were assigned to each one based on certain criteria. While the prioritization involved a certain degree of judgement based on professional experience and on current needs expressed by the City, the proposed improvements were subjected to various conditional and quantifiable measures to ensure a progressive and cost feasible addition into the City's Capital Improvement Program (CIP).

To ensure consistency and make use of the City's valuable resources, the criteria set forth in the most recent Transportation Element (2009) were used in the prioritization of these potential projects. These criteria essentially look at different ways in which a project can impact the overall environment of the City and ASSIGN WEIGHTED VALUES based on various conditions. Driven by the City's MULTI-MODAL GOALS, a few other qualitative measures were added to the Transportation Element criteria, to ensure projects were rated on how they may GEAR the transportation network TOWARD the endorsed MODE HIERARCHY and help achieve the 2035 MODE SHARE VISION. **Table 38** displays the criteria utilized for the prioritization of proposed projects.



All projects were assigned weighted values for each of the criterion and then ranked/prioritized based on the total value. The thresholds for the priorities were as follows:

PRIORITY 1	PRIORITY 2	PRIORITY 3
80 to 60	59 to 38	37 to 16

Table 38: Proposed Projects Evaluation Criteria

Criteria			Score	Description
Capacity	Travel Demand	L	1	0 ≤ AADT ≤ 10,000
		M	3	10,001 ≤ AADT ≤ 20,000
		H	5	20,001 ≤ AADT
	Demand to Capacity Ratio[1]	L	1	LOS A or LOS B
		M	3	LOS C or LOS D
		H	5	LOS E or LOS F
Connectivity	Personal Automobile	L	1	Improvements will not provide new roadway connections to improve the grid network of the city for the automobile mode of transportation
		M	3	Improvements will provide new connections to collector roadways for the automobile mode of transportation
		H	5	Improvements will provide new connections to arterial roadways for the automobile mode of transportation
	Transit	L	1	Improvements will not provide new roadway connections to improve the grid network of the city for the transit mode of transportation
		M	2 or 3	Improvements will provide new connections that will increase transit coverage to a small or limited area within the City (mixed-use facilities will receive a score of 2 while dedicated facilities will receive a score of 3)
		H	4 or 5	Improvements will provide new connections that will increase transit coverage between the regions of the City (South Beach, Middle Beach, and North Beach) or beyond the City (mixed-use facilities will receive a score of 4 while dedicated facilities will receive a score of 5)
	Bicycle	L	1	Improvements will not provide new roadway connections to improve the grid network of the city for the bicycle mode of transportation
		M	2 or 3	Improvements will provide new connections to existing bicycle facilities within a small or limited area of the City (mixed-use facilities will receive a score of 2 while dedicated facilities will receive a score of 3)
		H	4 or 5	Improvements will provide new connections that will structure the bicycle facilities network for movement between the regions of the City (South Beach, Middle Beach, and North Beach) or to multi-modal hubs (mixed-use facilities will receive a score of 4 while dedicated facilities will receive a score of 5)
	Pedestrian	L	1	Improvements will not provide new connections or facilities for pedestrians
		M	3	Improvements will provide new connections and/or enhance existing facilities for pedestrians within a small or limited area of the City
		H	5	Improvements will provide new connections for pedestrians to multi-modal hubs, key civic facilities, and/or touristic attractions

Criteria			Score	Description
Social Impacts	Adjacent Land Use	L	5	Changes in traffic behavior will have little to no change to the neighborhood quality of life, environmental resources, and/or access to community services
		M	3	Changes in traffic behavior will not exceed the neighborhood livability thresholds, improvements will partially affect environmental resources, and/or no significant access changes to community services will occur
		H	1	Changes in traffic behavior will exceed the neighborhood livability thresholds, improvements will affect environmental resources, and/or significant access changes to community services will occur
	Relocation of Residents	L	5	No residential displacement will occur and/or impacts to residential access will be of a small or nonexistent magnitude
		M	3	Magnitude of residential displacement will be less than the average City block and/or residential access will change moderately
		H	1	Magnitude of residential displacement will be greater than the average City block and/or residential access will be change drastically
Economic Impacts	Costs	L	5	$0 ≤ Total Improvements Cost ≤ $250,000 (in 2015$)
		M	3	$250,001 ≤ Total Improvements Cost ≤ $750,000 (in 2015$)
		H	1	$750,001 ≤ Total Improvements Cost (in 2015$)
	ROW Acquisition	L	5	No ROW acquisition required
		M	3	ROW acquisition required for a specific intersection, corner radii improvements, utility clips, and/or adjacent lands less than an average City block
		H	1	ROW acquisition required along a roadway segment longer than an average City block
	Relocation of Businesses	L	5	No business displacements will occur and/or impacts to business access will be of a small or nonexistent magnitude
		M	3	Magnitude of business displacement will be less than the average City block and/or business access will change moderately
		H	1	Magnitude of business displacement will be more than the average City block and/or business access will change drastically
Multi-Modalism	Potential for Mode Shift	L	1	Multi-modal improvements are of minor significance to induce a modal shift from vehicular transportation that would result in fuel savings and reduction in carbon dioxide emissions
		M	3	Multi-modal improvements limited to a specific location are considered of moderate significance to induce a modal shift from vehicular transportation within the City
		H	5	Multi-modal improvements across several neighborhoods are considered of major significance to reduce single occupancy vehicle within one of the three regions of the City (South Beach, Middle Beach, and North Beach) or Citywide

Criteria			Score	Description
Regional Connectivity	Mobility to Downtown	L	1	Proposed improvements will mostly have an impact on the internal Citywide multi-modal transportation network
		M	3	Proposed improvements will indirectly provide connectivity to the mainland for all or various modes of transportation
		H	5	Proposed improvements will directly provide connectivity to the mainland for all or various modes of transportation
	Mobility to the Airport	L	1	Proposed improvements will mostly have an impact on the internal Citywide multi-modal transportation network
		M	3	Proposed improvements will indirectly provide connectivity to multi-modal routes/roadways and/or infrastructure which will essentially culminate or connect to MIA
		H	5	Proposed improvements will directly provide connectivity to multi-modal routes/roadways and/or infrastructure which will essentially culminate or connect to MIA
Needs	Recurrent	L	1	Project does not relate or indirectly relates or partially connects to identified and/or implemented projects from previous planning efforts
		M	3	Project partially connects or is part of identified and/or implemented projects from previous planning efforts
		H	5	Project has been identified in previous planning efforts and has yet to be implemented
	Current	L	1	Project has been identified as an improvement to the overall multi-modal transportation network but has had little or no expressed need
		M	3	Project has been identified as an improvement to the overall multi-modal transportation network and a medium to low level of need has been expressed for it by the Region, City, and/or residents and stakeholders
		H	5	Project has been identified as an improvement to the overall multi-modal transportation network and a medium to high level of need has been expressed for it by the Region, City, and/or residents and stakeholders

[1] Only LOS for motorized vehicles was obtained

L = Low Priority **M** = Medium Priority **H** = High Priority

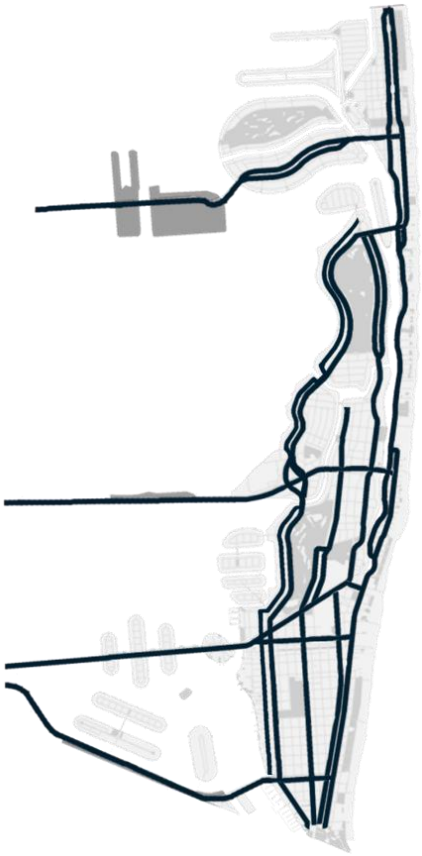
CORRIDOR ANALYSIS

7. CORRIDOR ANALYSIS

MODE PRIORITIZATION ON THE CITY'S MAJOR ROADWAYS

The idea behind this exercise was driven by the notion that in order to truly make a difference in the way City residents and visitors travel, modes other than the personal automobile had to be prioritized on certain roadways, specifically those which currently carry the most amounts of people. This means that dedicated, reliable, and efficient **FACILITIES THAT PROVIDE CONNECTIVITY THROUGH THE EXTENT OF THE CITY LIMITS** have to be provided to actually make a true shift in the current mode split.

The process was straight forward: there are only a few roads within then City that provide continuous connectivity in the north-south direction as well as in the east-west; and while the TMP team identified five (5) north-south corridors and four (4) east-west corridors, there is actually **ONLY ONE(1) ROADWAY** which is **CONTINUES THROUGHOUT THE ENTIRE CITY**, SR A1A/Collins Avenue, the rest of the corridors are combinations of roadways that when combined provide sufficient coverage of the City and were considered major links.



NORTH-SOUTH

- SR A1A / Collins Avenue (Indian Creek Drive & Harding Avenue)
- SR 907 / Alton Road – 63rd Street
- Meridian Avenue and Prairie Avenue
- Pine Tree Drive
- Washington Avenue
- West Avenue and Bay Road

EAST-WEST

- SR A1A / MacArthur Causeway – 5th Street
- Venetian Causeway – Dade Blvd. & 17th St.
- SR 112 / Julia Tuttle Causeway – 41st Street
- SR 934 / 79th Street (Kennedy Causeway) – 71st Street

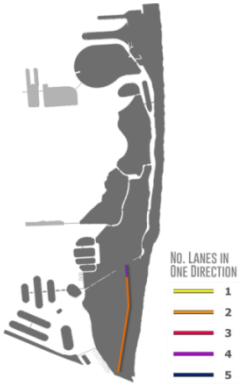
To make recommendations, different aspects of EACH INDIVIDUAL FACILITY had to be ASSESSED in order to prioritize alternative modes of transportation within the City's 10 major corridors. This analysis involved looking at corridor specific data such as:

- Adjacent land use,
- Number of bus routes running on the facility,
- Number of transit stops,
- Daily ridership per stop,
- Miles of dedicated bicycle facilities,
- Number of signalized intersections,
- AADT volumes, and
- Vehicular LOS.

Additionally, through the use of current aerial photography, and supplemented by field reviews, an INVENTORY was performed for THE EXISTING INFRASTRUCTURE of each of the 10 corridors. This implied defining the existing typical section(s) from beginning to end of each corridor and defining the number of different segments for each corridor; every point at which the typical section changed marked the start of a new segment. Knowing the different elements (travel lanes, parking lanes, sidewalk widths, etc.) became a VALUABLE RESOURCE during this process, making it easier to know how much dedicated public right-of-way is available and how it can be redefined TO RECOMMEND A MORE UNIFORM FACILITY in which certain modes have priority. ***Figures 76*** through ***95*** display the aforementioned data for each of the 10 corridors as well as their segments and respective existing typical sections. It should be noted that the typical sections portrayed are meant to display approximate dimensions to be used for planning recommendations; any further analysis recommending changes to this typical should be performed with more detailed, perhaps surveyed, dimensions.

The Washington Avenue Example

In an approach to visualize the impact that redefining the purpose of a travel lane would have in term of moving people, Washington Avenue was used as an example. The bidirectional Annual Average Daily Traffic (AADT) for this roadway was obtained, and then converted into person trips using the nationwide average value of 1.6 persons per vehicle (discussed in the Mode Share section of this document). This total daily person trips was divided by the number of travel lanes on Washington Avenue to approximate the number of PEOPLE TRAVELING ON A SINGLE LANE. Then this number of persons/lane/day was compared to the number of people that can be POTENTIALLY CARRIED DAILY ON A DEDICATED BUS LANE; assuming that an articulated bus would pass every 5 minutes and would have an occupancy of approximately 75 percent. This of course is a very schematic approach and deserves more in depth analysis; however, it is a valid exercise to show the potential of providing a facility with transit priority.



Existing Person Throughput per Lane				Potential Person Throughput per Lane			
Personal Vehicles				Transit			
AADT	Persons/ Day	# of Lanes	Persons/ Lane/ Day	# of Dedicated Lanes	Vehicle Capacity	Vehicles/ Hour	Persons/ Lane/ Day
18,700	29,920	4	7,480	1	75	20	15,000

Figure 75: Washington Avenue Person Throughput

NORTH-SOUTH CORRIDORS

SR A1A/Collins Avenue

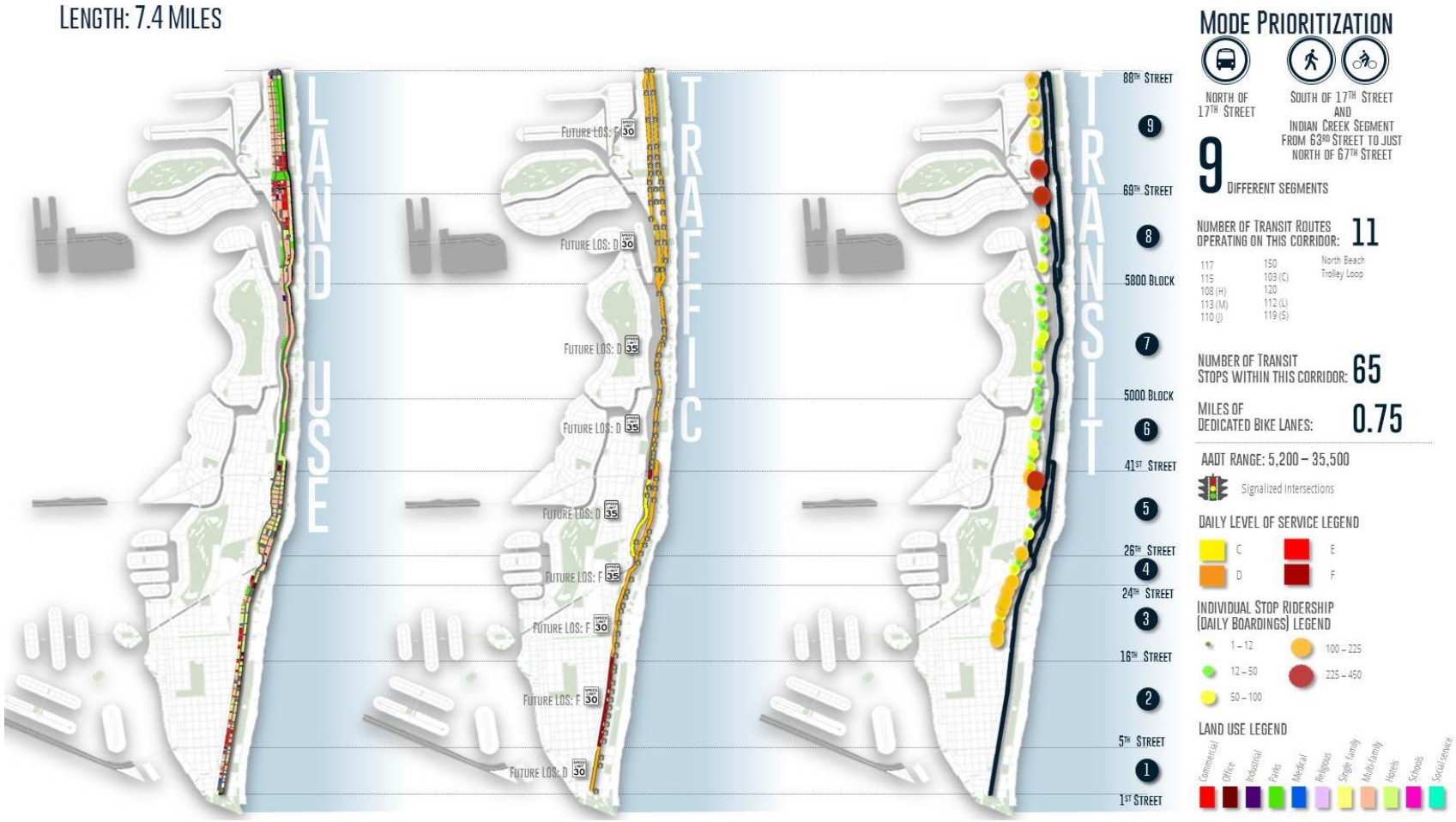


Figure 76: SR A1A/Collins Avenue Corridor Mode Prioritization Data

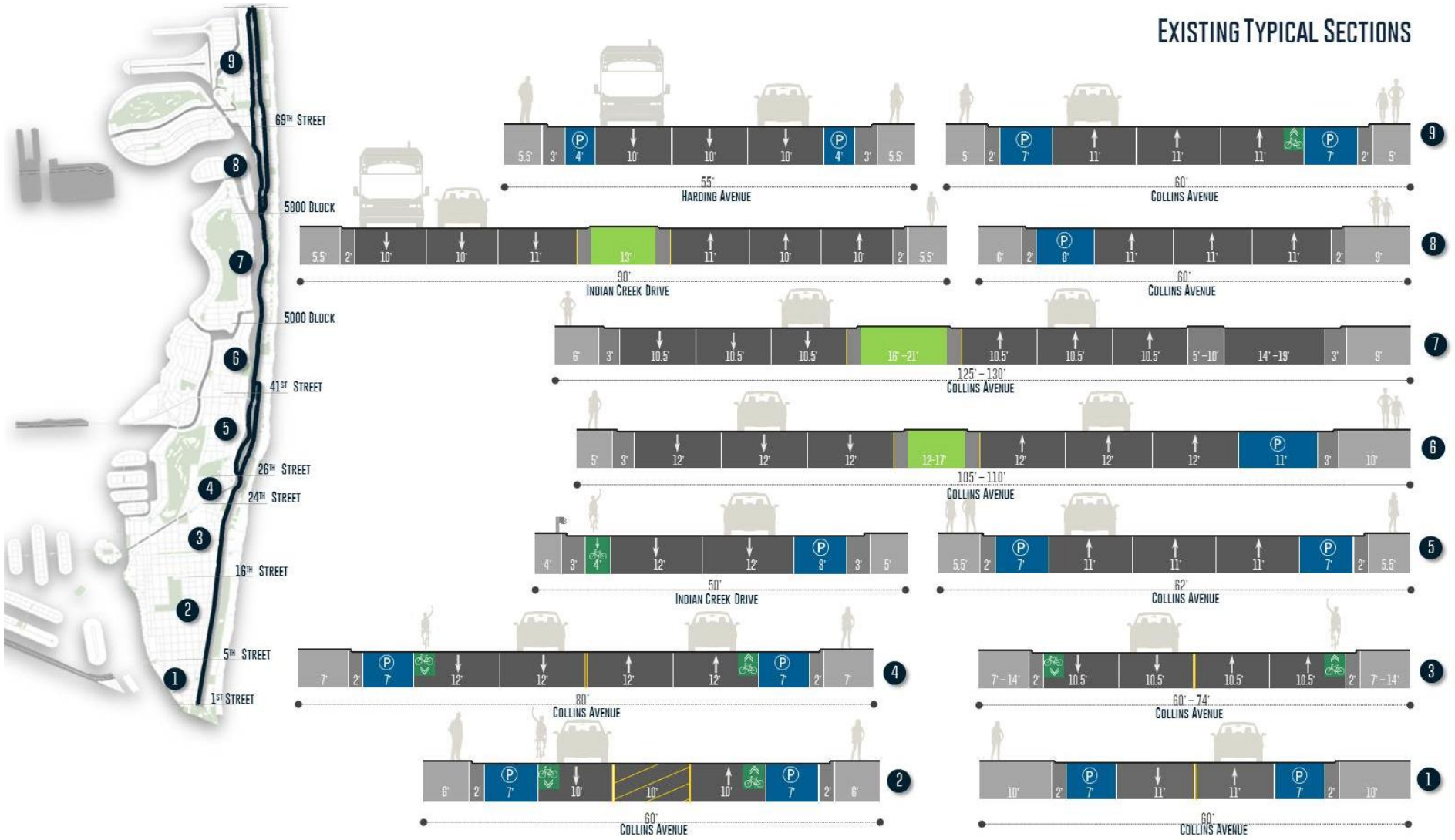


Figure 77: SR A1A/Collins Avenue Corridor Segments and Existing Typical Sections

SR 907/Alton Road – 63rd Street

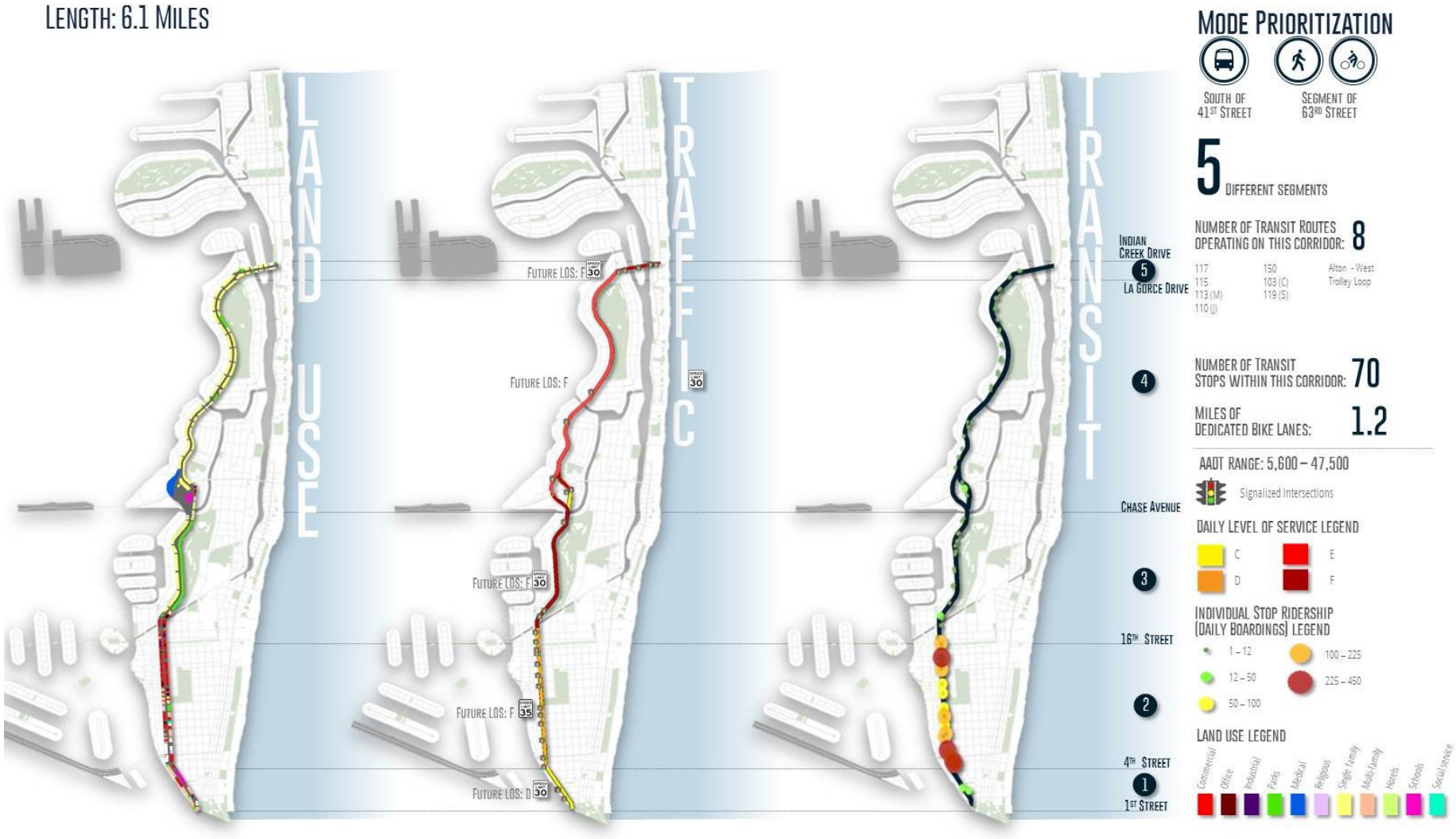


Figure 78: SR 907/Alton Road – 63rd Street Corridor Mode Prioritization Data

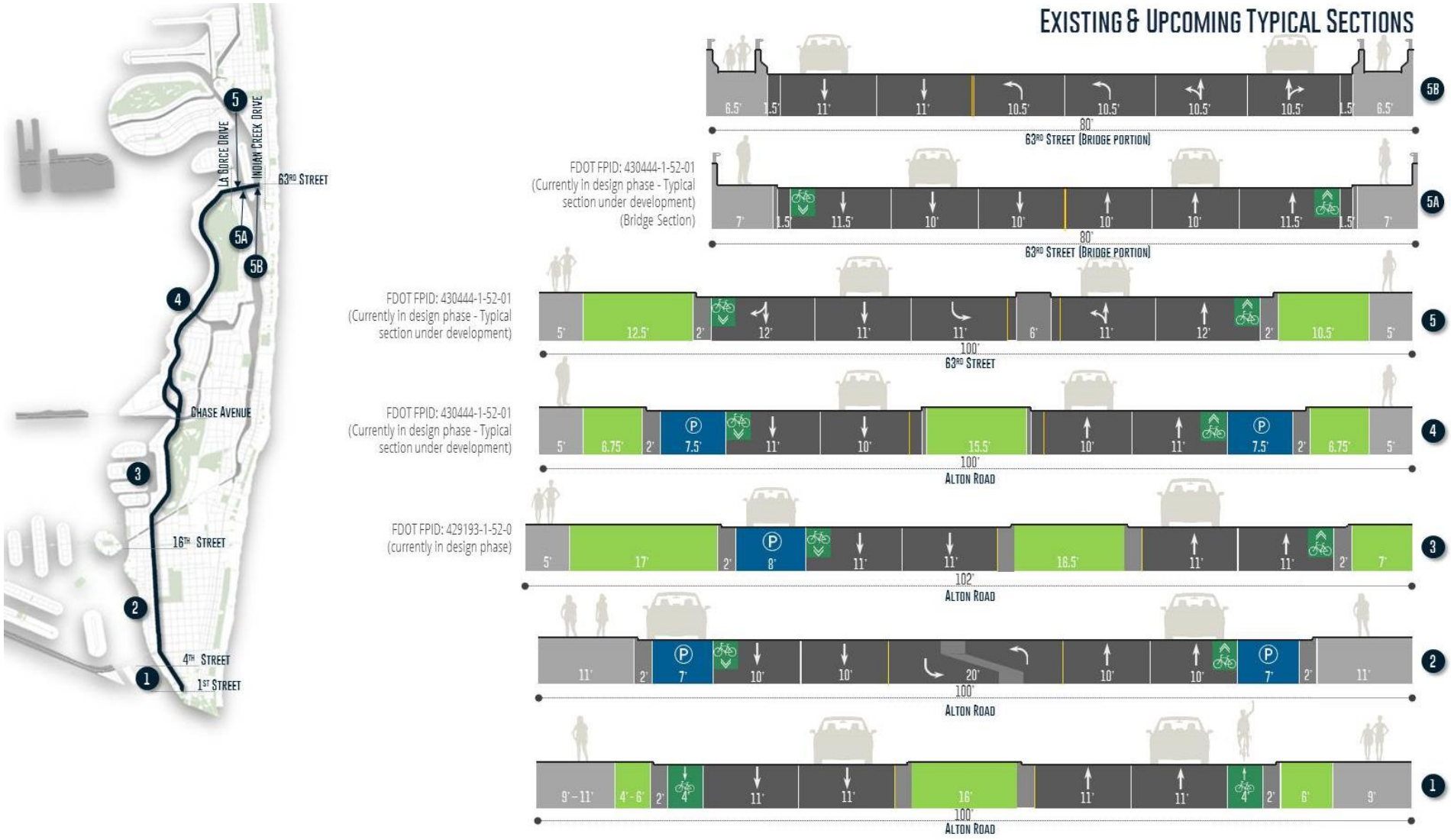


Figure 79: SR 907/Alton Road – 63rd Street Corridor Segments and Existing Typical Sections

West Avenue – North Bay Road

Figure 80: West Avenue – North Bay Road Corridor Mode Prioritization Data

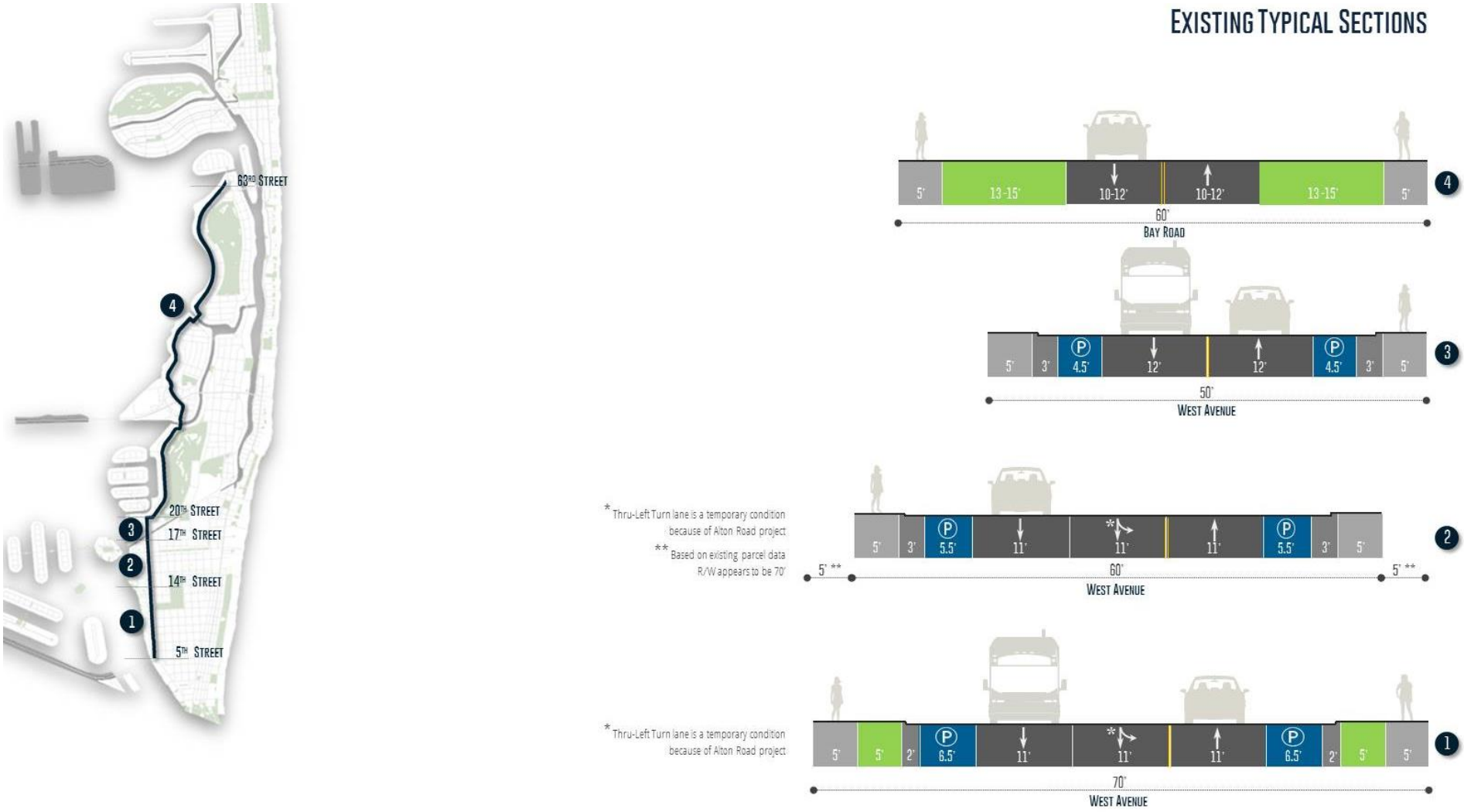


Figure 81: West Avenue – North Bay Road Corridor Segments and Existing Typical Sections

Meridian Avenue - Prairie Avenue

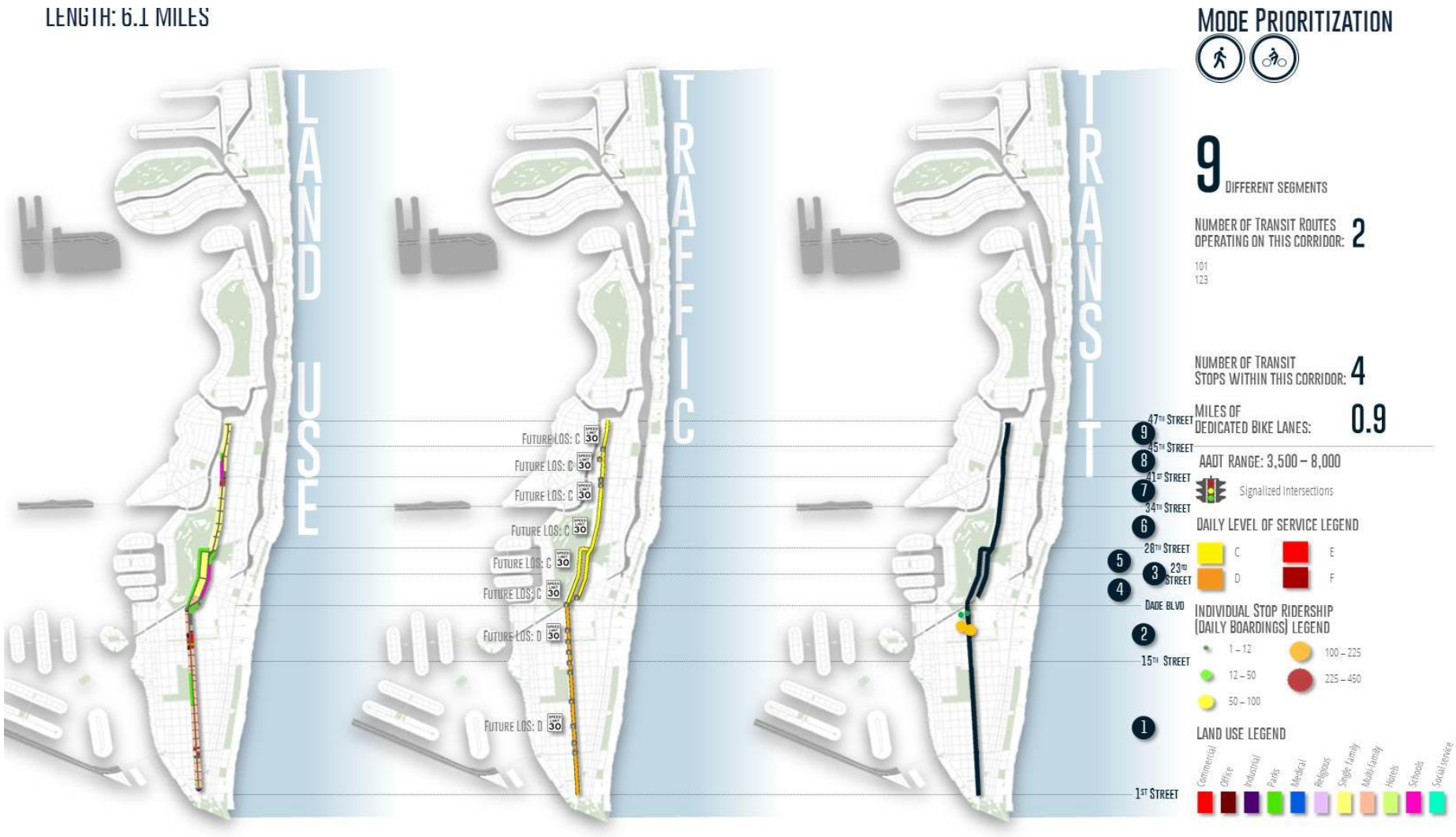


Figure 82: Meridian Avenue - Prairie Avenue Corridor Mode Prioritization Data

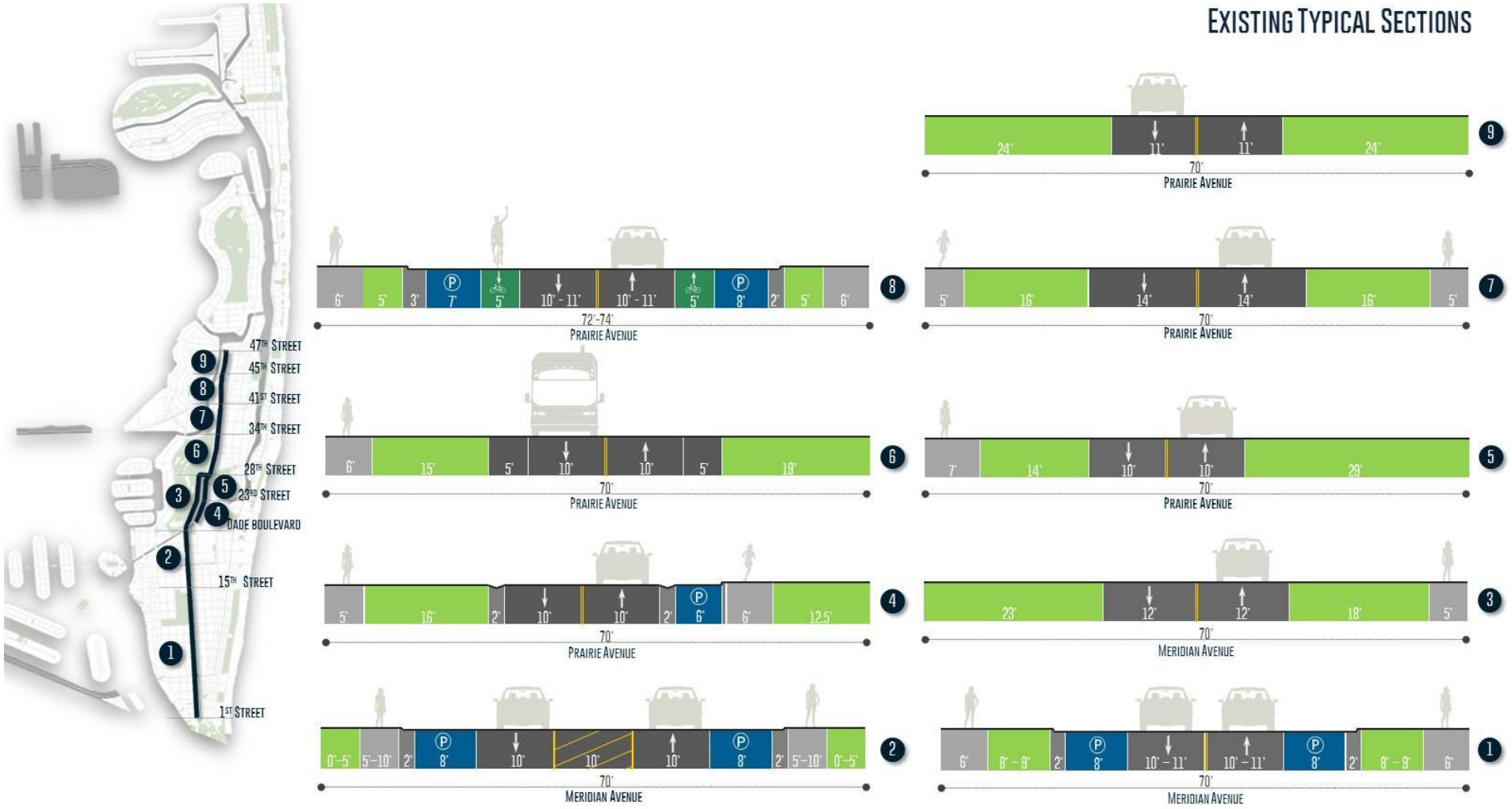


Figure 83: Meridian Avenue - Prairie Avenue Corridor Segments and Existing Typical Sections

Pine Tree Drive and La Gorce Drive

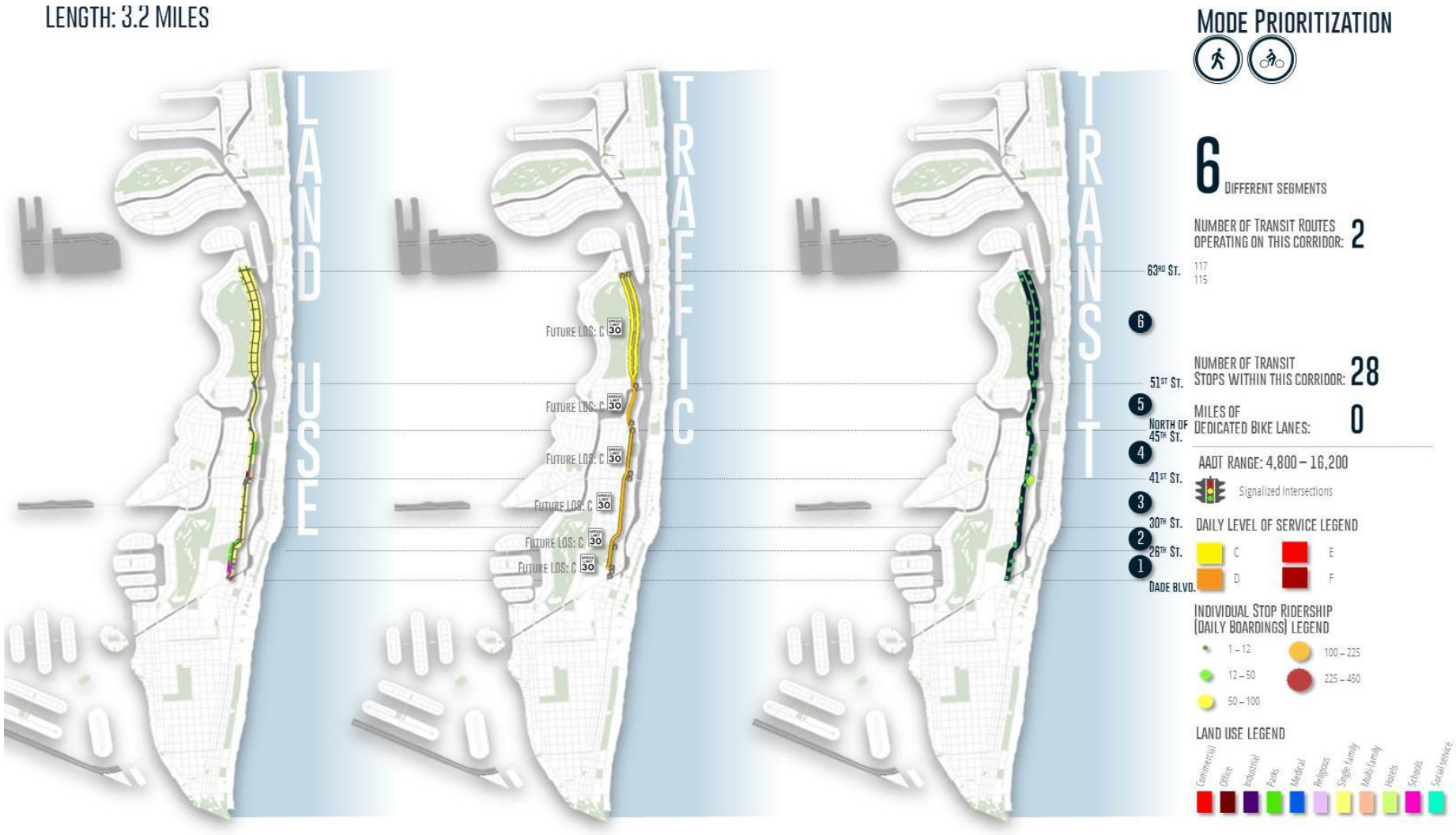


Figure 84: Pine Tree Drive and La Gorce Drive Corridor Mode Prioritization Data

Figure 85: Pine Tree Drive and La Gorce Corridor Segments and Existing Typical Sections

Washington Avenue

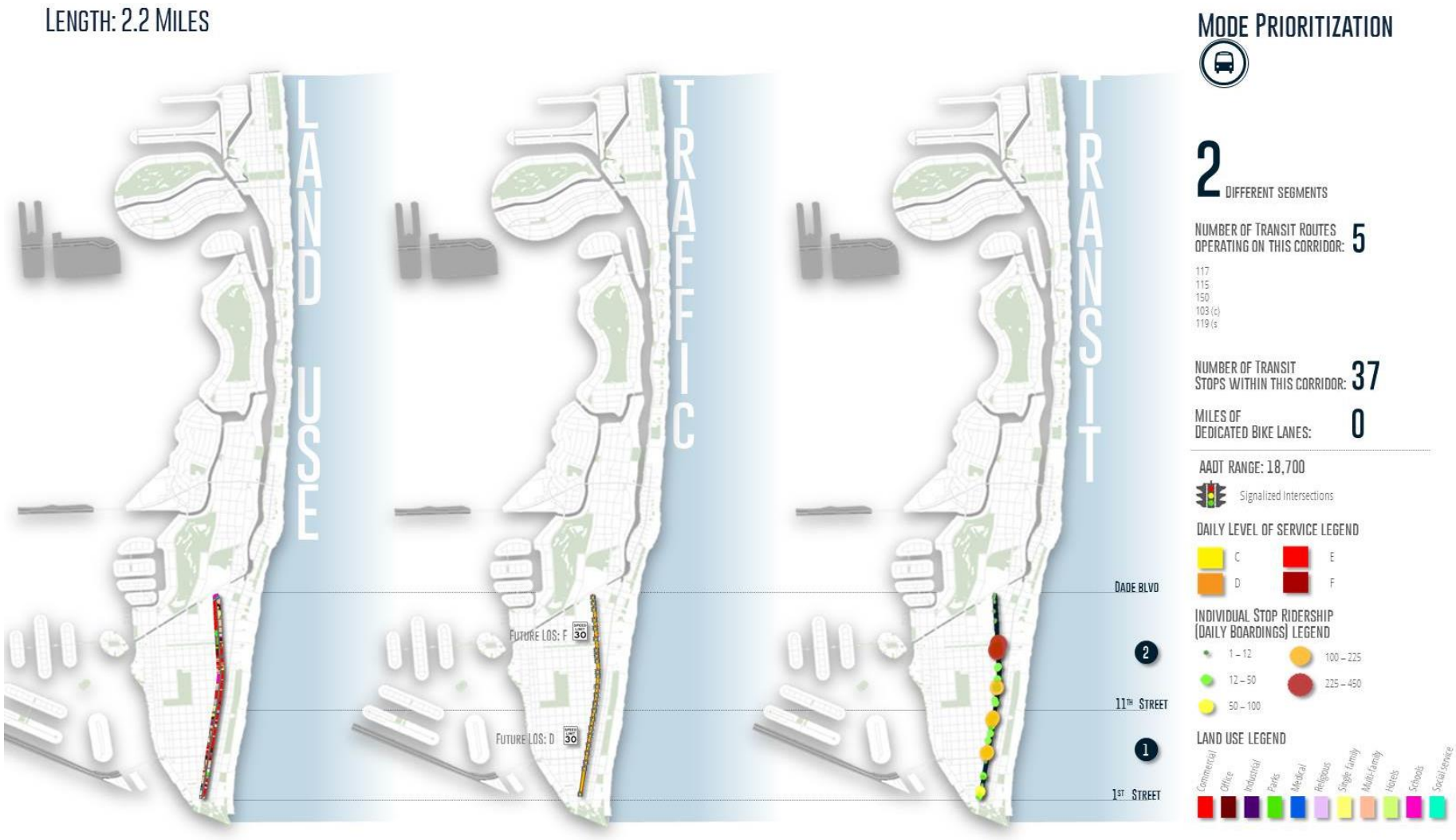


Figure 86: Washington Avenue Corridor Mode Prioritization Data

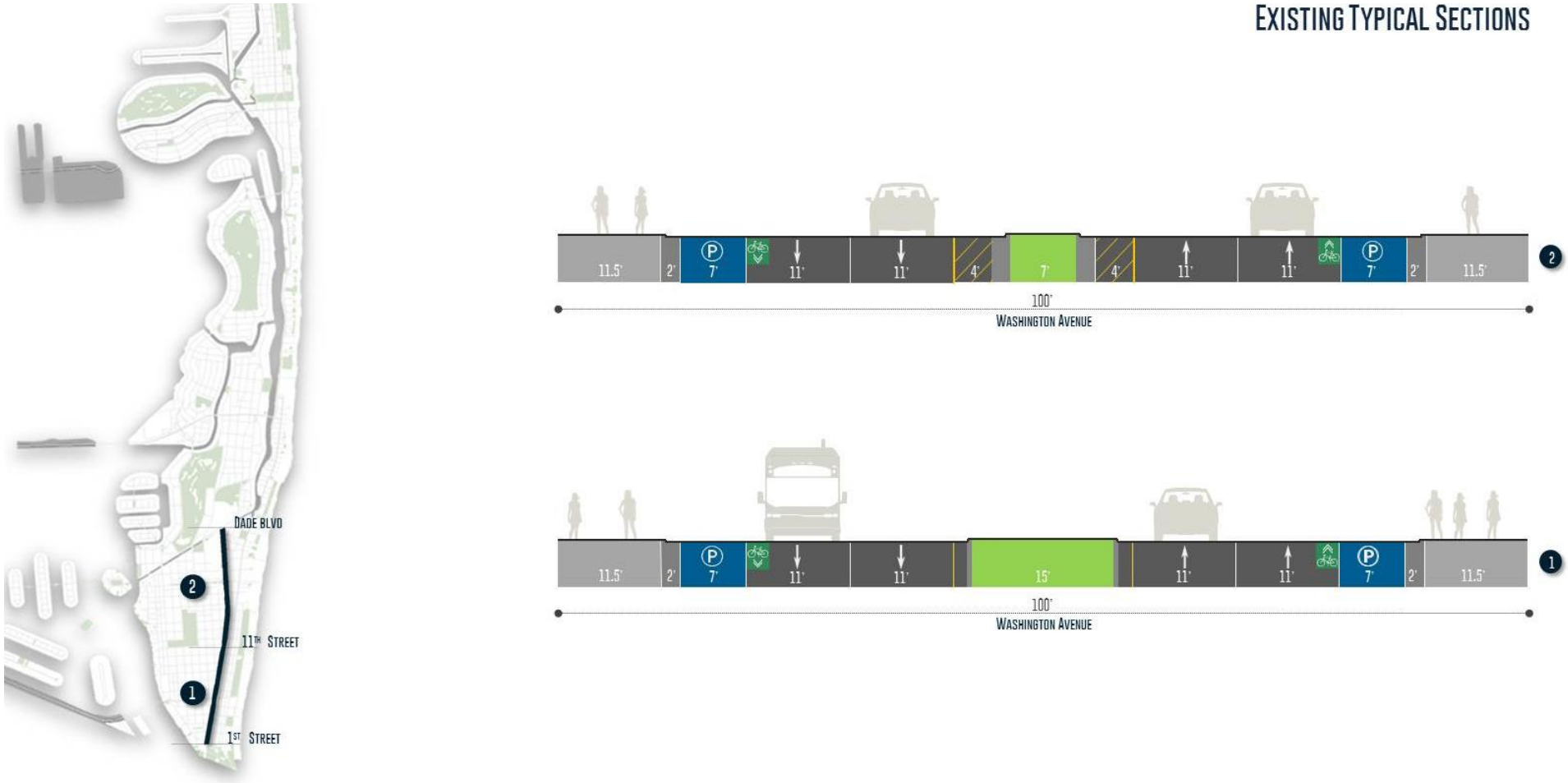


Figure 87: Washington Avenue Corridor Segments and Existing Typical Sections

EAST-WEST CORRIDORS

SR A1A/MacArthur Causeway - 5th Street

LENGTH: 2.5 MILES

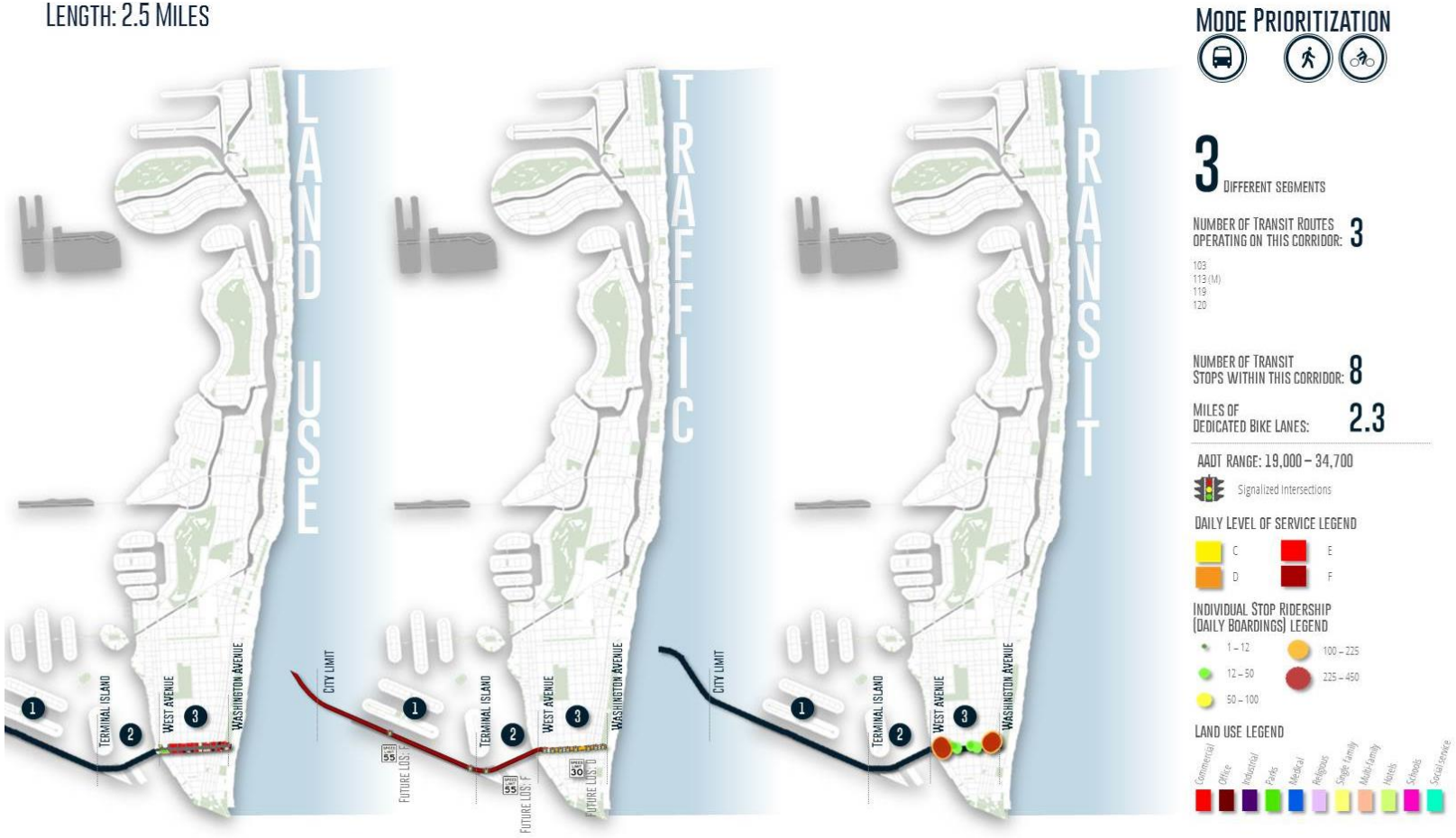


Figure 88: SR A1A/MacArthur Causeway - 5th Street Corridor Mode Prioritization Data

Figure 89: SR A1A/MacArthur Causeway - 5th Street Corridor Segments and Existing Typical Sections

Venetian Causeway - Dade Boulevard - 17th Street

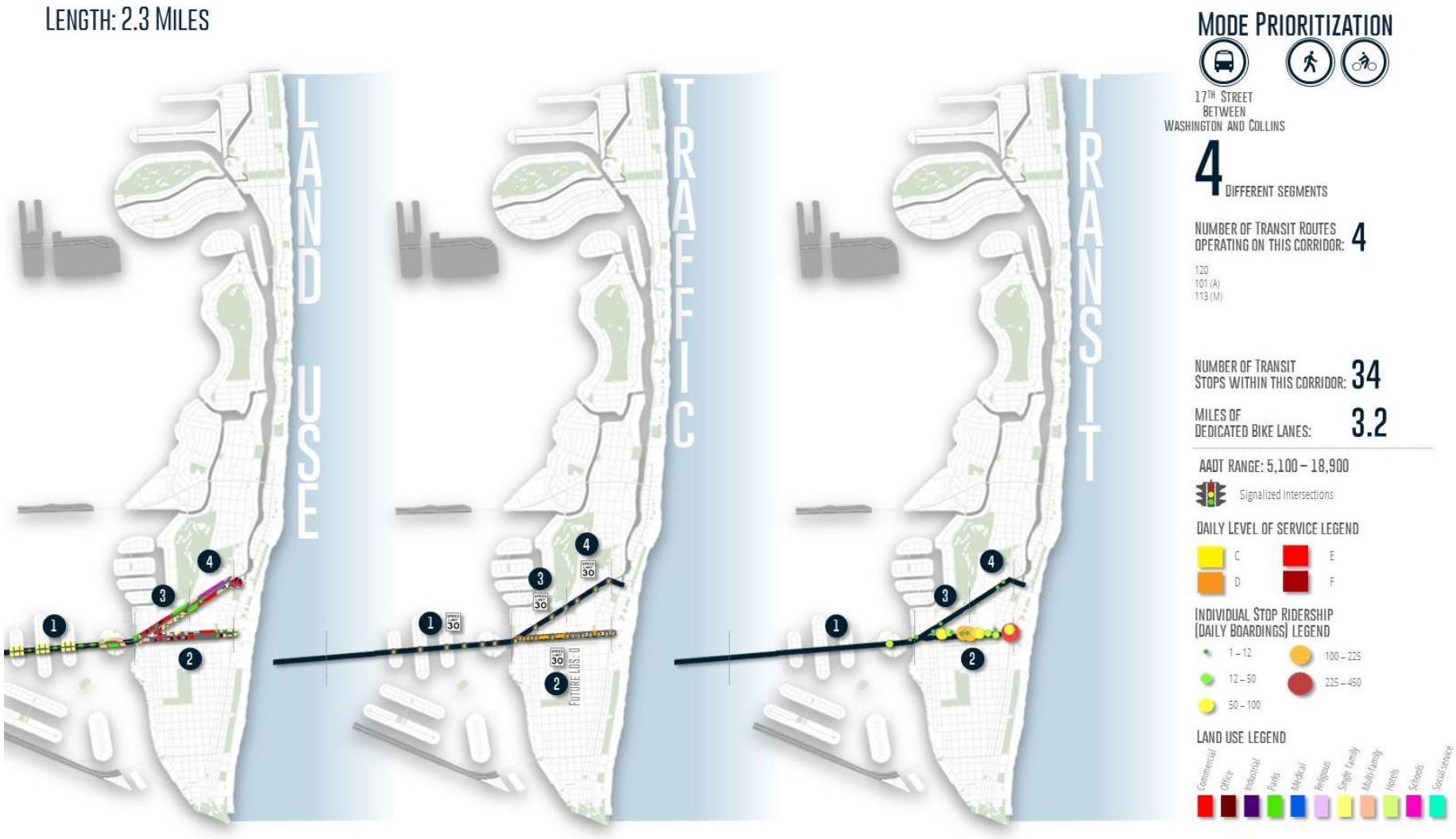


Figure 90: Venetian Causeway - Dade Boulevard - 17th Street Corridor Mode Prioritization Data

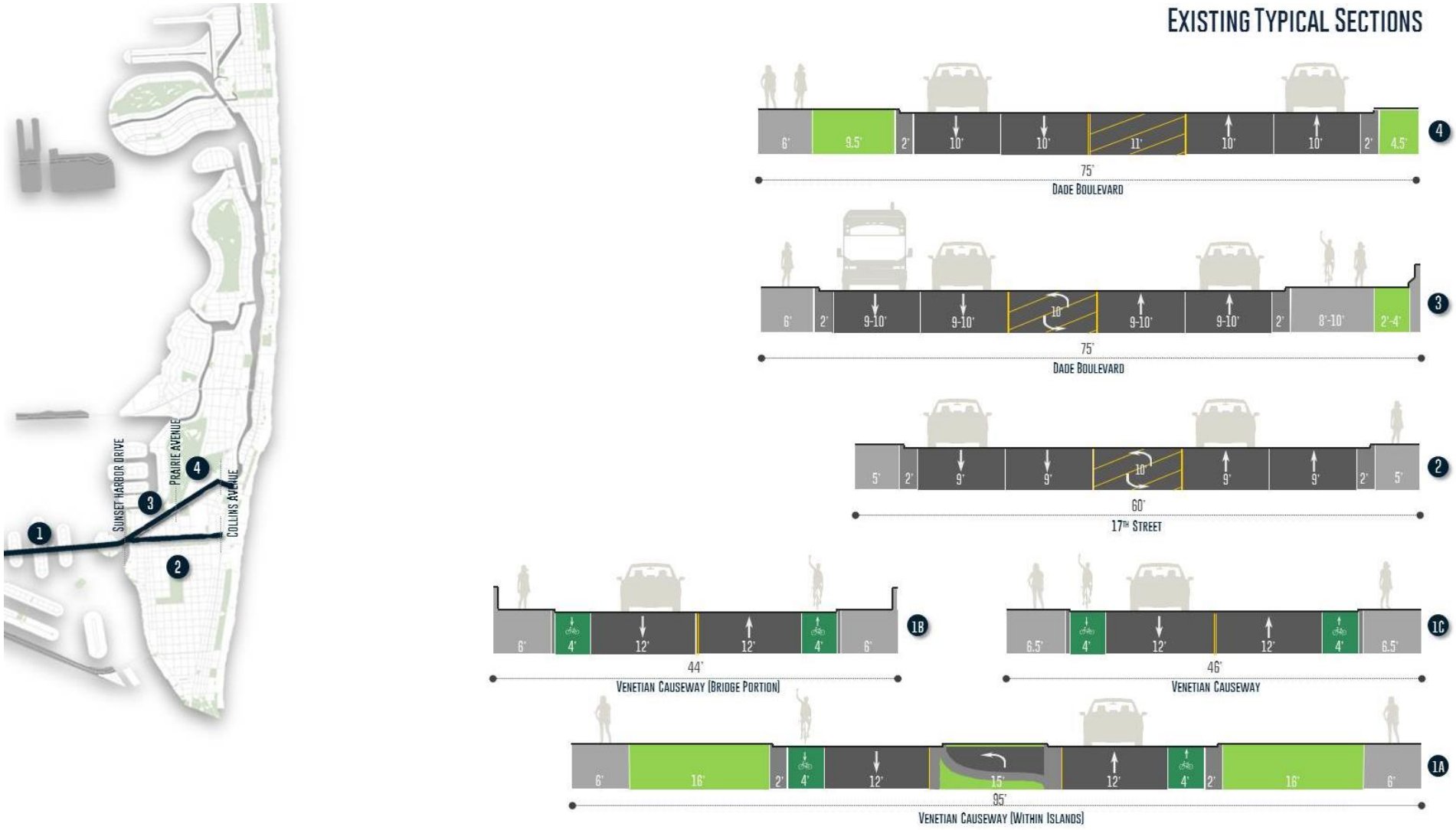


Figure 91: Venetian Causeway - Dade Boulevard - 17th Street Corridor Segments and Existing Typical Sections

SR 112/Julia Tuttle Causeway – 41st Street

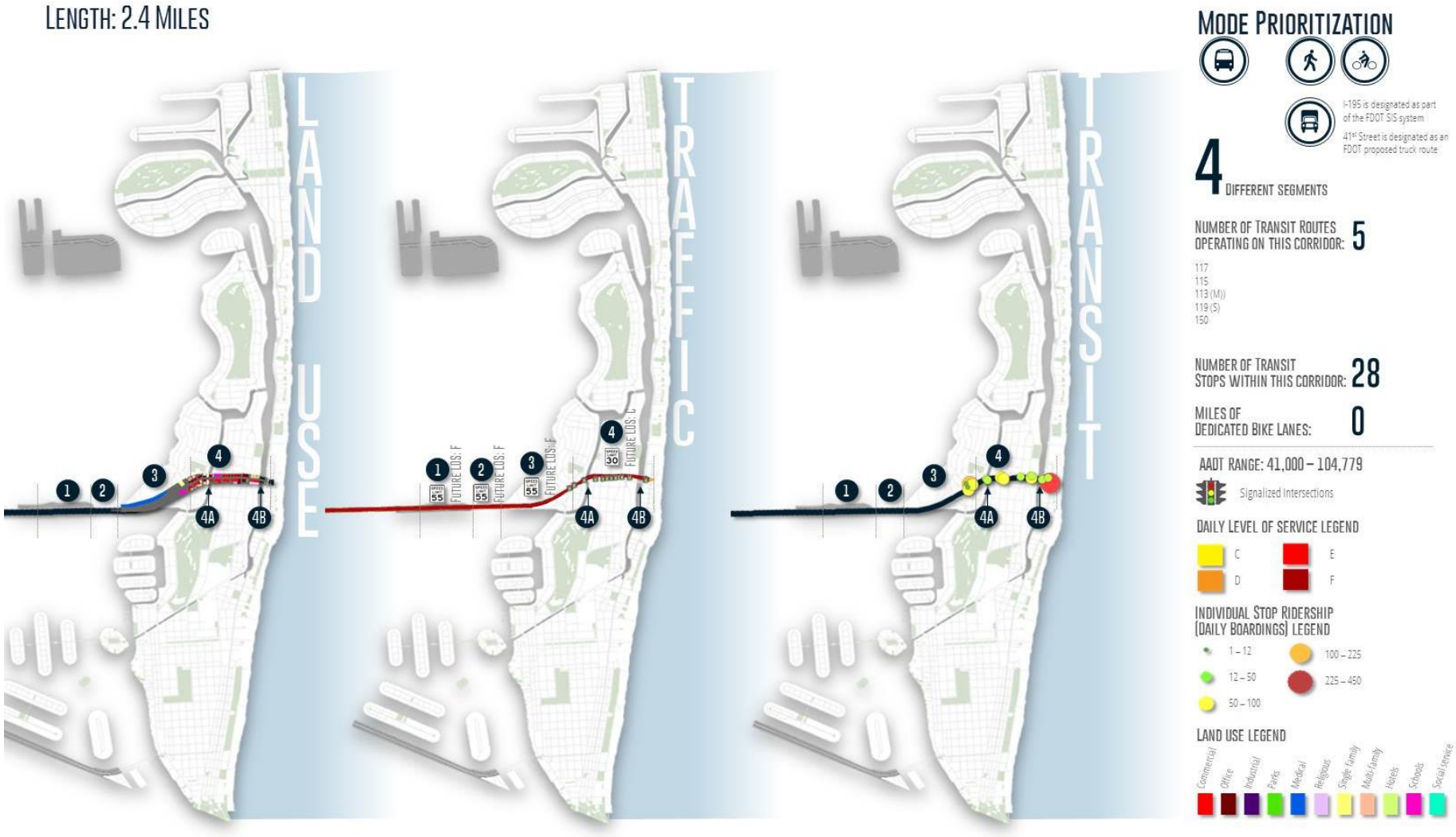


Figure 92: SR 112/Julia Tuttle Causeway – 41st Street Corridor Mode Prioritization Data

Figure 93: SR 112/Julia Tuttle Causeway – 41st Street Corridor Segments and Existing Typical Sections

SR 934/79th Street Causeway – 71st Street

Figure 94: SR 934/79th Street Causeway – 71st Street Corridor Mode Prioritization Data

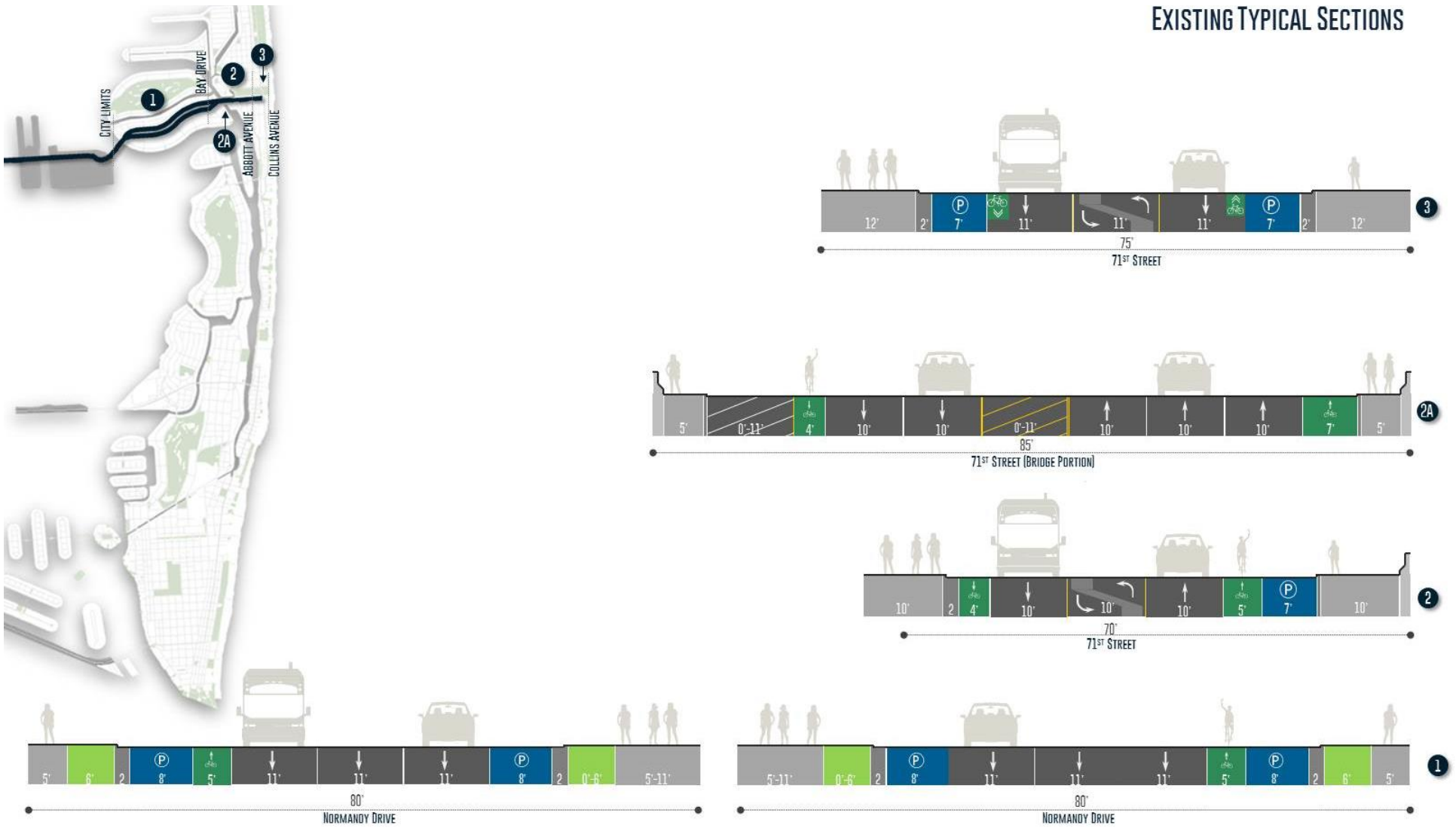


Figure 95: SR 934/79th Street Causeway – 71st Street Corridor Segments and Existing Typical Sections

CORRIDOR ANALYSIS RESULTS

Through the analysis of corridor specific data and existing infrastructure shown above as well as general knowledge of how the transportation network of the City functions, the 10 major corridors were grouped into TRANSIT and BICYCLE/PEDESTRIAN CORRIDORS. Through basic ridership data along the roadway and functionality, it became clear which of these major facilities should provide exclusive right-of-way for transit. Essentially, three(3) of the four(4) causeways entering the City from the mainland as well as their receiving roadways were defined as transit corridors since these are the facilities actually carrying the people in and out of the City on a daily basis. Similarly, and under the notion that ALL MODES SHOULD BE PROVIDED WITH EQUAL OPPORTUNITIES, all of the four (4) causeways were defined as bicycle/pedestrian corridors. This should be accomplished through the provision of exclusive and protected facilities that would safely accommodate any traveler type choosing to cross the Biscayne Bay bicycling or on foot. It should be noted that all of the causeways are under the jurisdiction of agencies other than the City of Miami Beach and thus close coordination should take place regarding future modifications to the typical section(s) of these facilities.

This exercise/analysis yielded what this TMP considers to be a comprehensive, connected, and exclusive network for the Transit, Bicycling, and Walking modes of transportation. The 10 major corridors alone would not complete the entire grid; and therefore, to cover the vast majority of the City and create a web that would extend to the majority of the areas, MULTI-MODAL CONNECTORS were identified as the crucial links to provide full and continuous connectivity. These connectors are other minor city roadways which have been identified as good candidates to provide sufficient amenities and/or exclusivity to these other modes of transportation to provide a complete network. ***Figures 96*** and 9***8*** show the transit network, bicycle/pedestrian network, and multi-modal connectors, respectively, which this TMP recommended for multi-modal projects to take place on and for future planning, design and construction efforts to be carried forward in subsequent phases. Additionally, ***Figures 99*** portrays how the multi-modal connectors relate to the bicycle/pedestrian network.

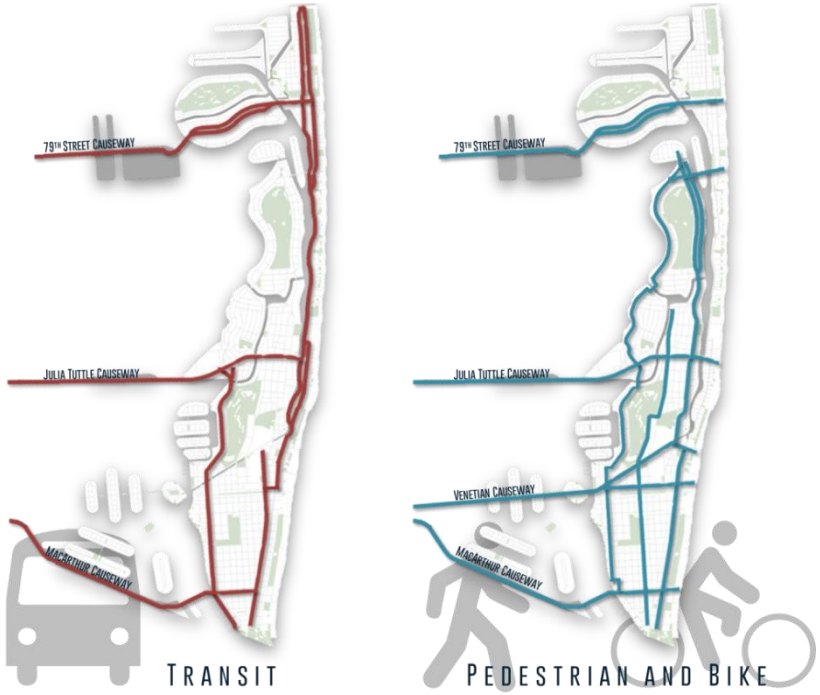


Figure 96: TMP Recommended Transit Corridors and Bicycle/Pedestrian Corridors

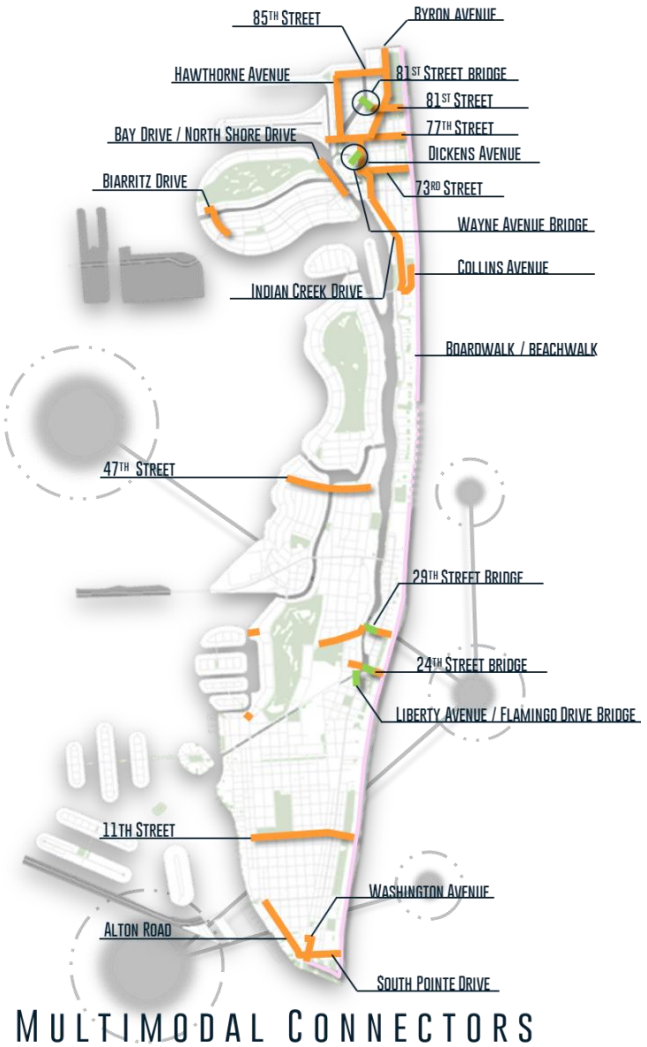


Figure 97: TMP Recommended Multi-modal Connectors (Network Links)

Figure 98: TMP Recommended Transit Network and Multi-modal Connectors (Network Links)

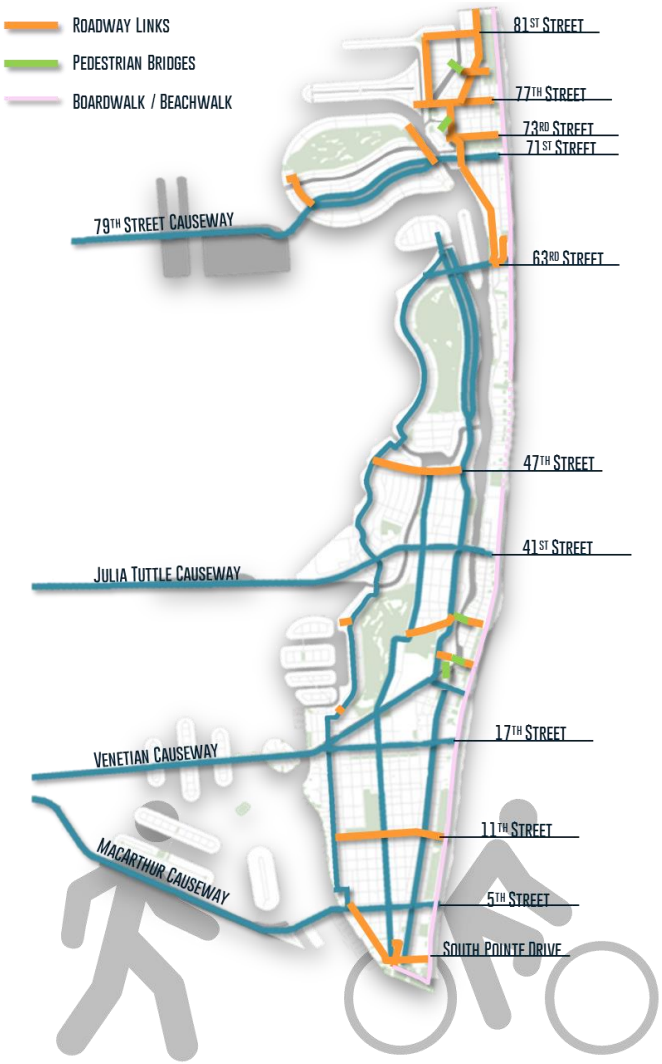


Figure 99: TMP Recommended Bicycle/Pedestrian Network and Multi-modal Connectors (Network Links)

Transit Priority Corridors

Transit priority corridors are those roadways or combinations of roadways that have been recommended by this TMP to PROVIDE EXCLUSIVE RIGHT-OF-WAY FOR TRANSIT. This exclusivity should be provided through the implementation of any of the different types of transit exclusive lanes, or combinations, previously mentioned in this section of the report. This recommended exclusive transit corridors are intended to provide a RELIABLE, CONNECTED AND CONTINUOUS INFRASTRUCTURE NETWORK with the goal of achieving the City's 2035 multi-modal vision. ***Figure 100*** and ***101*** portray the TMP recommended transit network; a more detailed description on how these corridors were defined and recommended is provided in the Corridor Analysis section of this document.

Additionally, ***Figures 102*** through ***109*** provide an array of potential typical sections for certain segments of these transit corridors. These typical sections were developed using the comprehensive major corridor existing infrastructure inventory (provided in the Corridor Analysis section of this documents), and should be used as a GUIDE FOR POTENTIAL CONFIGURATIONS of these roadway segments during further stages of projects recommended by this TMP.

Figure 100: TMP Recommended Transit Priority Corridors

Figure 101: TMP Recommended Transit Priority Corridors & Potential Typical Sections Locations

Transit Corridors Potential Typical Sections

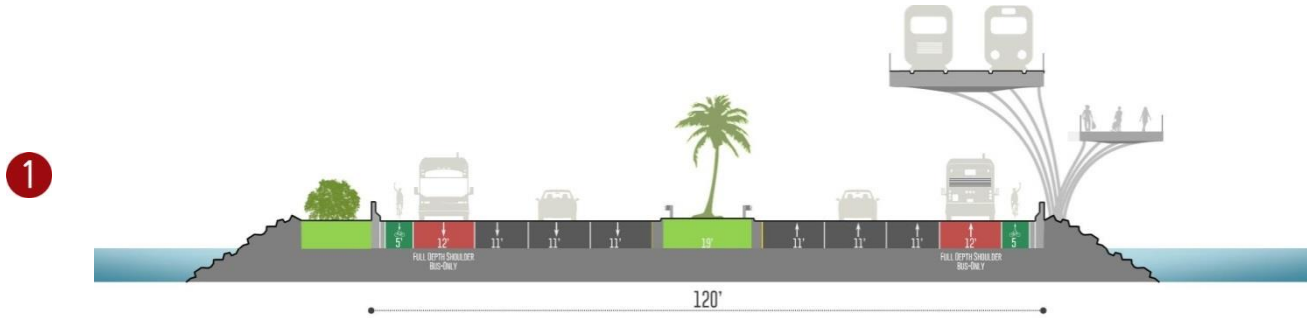


*Figure 102: **SR A1A/ MacArthur Causeway** Transit Corridor Potential Typical Section from US-1 / Biscayne Blvd to SR 907/Alton Road*

TMP Project Bank Priority 1: No. 2 and Priority 3: No. 25

This typical section recommends Exclusive Bus Lanes and Bicycle Lanes (Priority 1), and elevated Light Rail Facility and Shared Use Path (Priority 3)

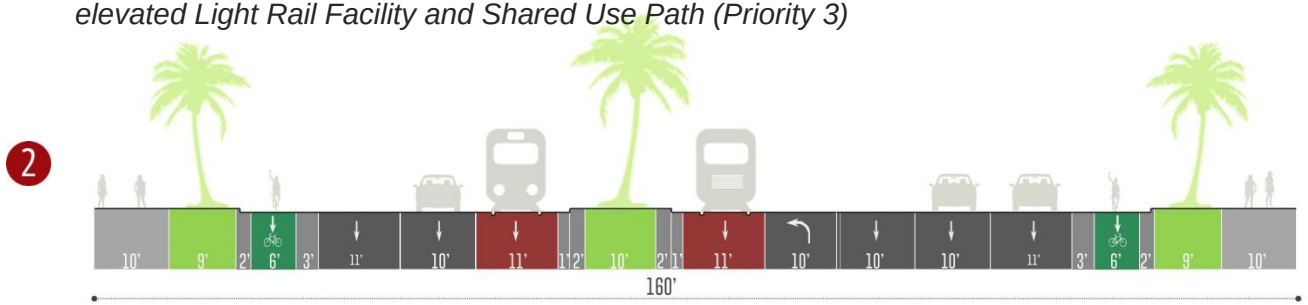


*Figure 103: **SR A1A/ 5th Street** Transit Corridor Potential Typical Section from SR 907/Alton Road to Washington Avenue*

TMP Project Bank Priority 1: No. 3 and No. 5

This typical section recommends Exclusive Buffer Separated/Protected Bicycle Lanes, Light Rail and Bus Lanes. The exclusive bicycle lanes of this segment will extend to Ocean Drive.

*Figure 104: **Washington Avenue** Transit Corridor Potential Typical Section from SR A1A/5th Street to Dade Boulevard*

3

TMP Project Bank Priority 1: No. 4 and No. 6

This typical section recommends Exclusive Light Rail and Bus Lanes.

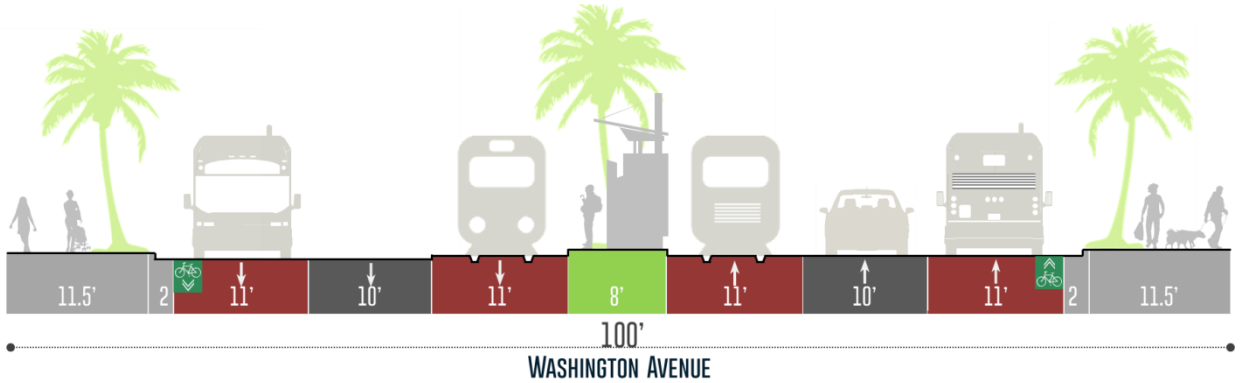


*Figure 105: **71st Street/Normandy Drive** Transit Corridor Typical Section from the end of the 79th Street Causeway to SR A1A Collins Avenue*

4

TMP Project Bank Priority 2: No. 7

This typical section recommends Exclusive Transit Lanes and Protected Bicycle Lanes.

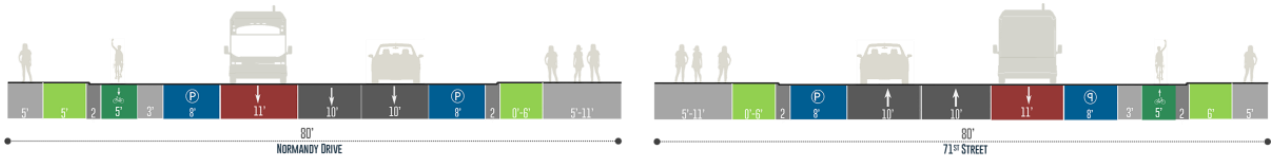


*Figure 106: **SR A1A/Collins Avenue** Transit Corridor Potential Typical Section from 44th Street to 5900 City Block*

5

TMP Project Bank Priority 3: No.3

This typical section recommends Exclusive Transit Lanes.

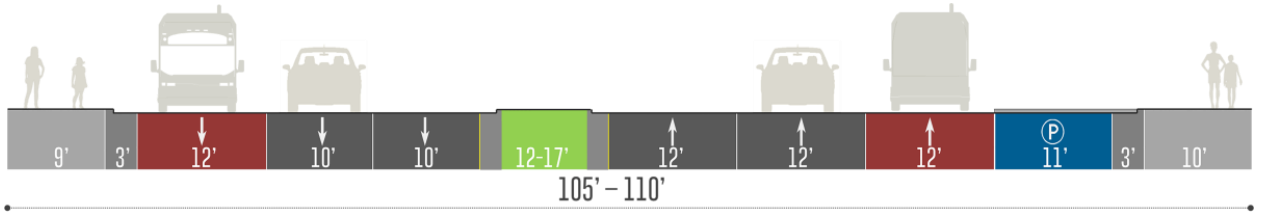


*Figure 107: **SR 112/Julia Tuttle Causeway** Transit Corridor Potential Typical Section non-bridge portion of the causeway located within the Biscayne Bay*

TMP Project Bank Priority 3: No. 27
This typical section recommends a Shared Use Path, Exclusive Transit Lanes.

6

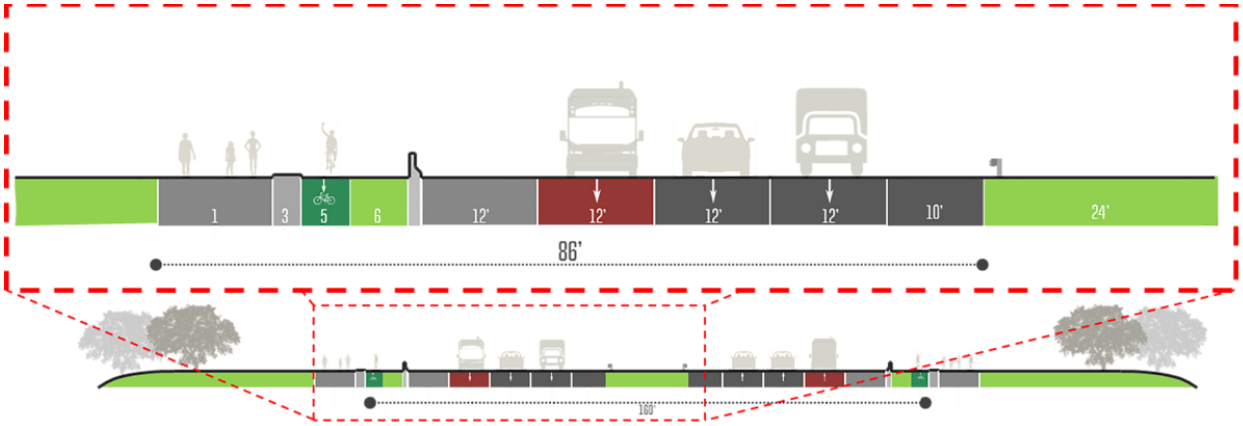


*Figure 108: **SR A1A/Collins Avenue/Indian Creek Drive** Transit Corridor Potential Typical Section from 17th Street to 44th Street*

TMP Project Bank Priority 2: No.2
This typical section recommends Exclusive Bicycle and Bus Lanes.

7

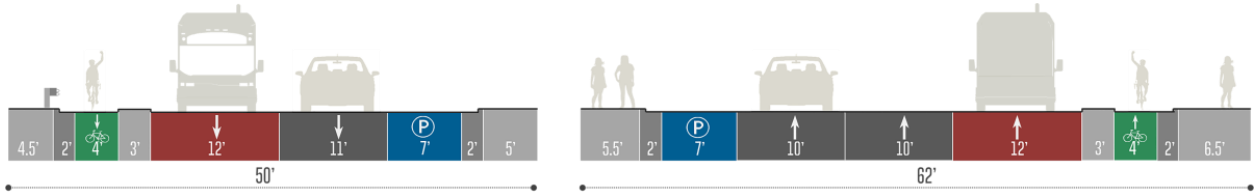
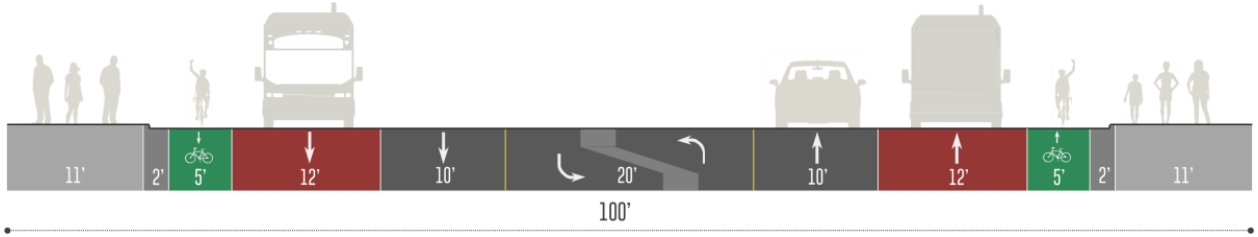


*Figure 109: **SR 907/Alto Road** Transit Corridor Potential Configuration from South Pointe Drive to Dade Boulevard*

TMP Project Bank Priority 3: No. 11 and 14
This typical section recommends Conventional Bicycle Lanes and Exclusive Bus Lanes.

8



Bicycle & Pedestrian Priority Corridors

Bicycle priority corridors are those roadways or combinations of roadways that have been recommended by this TMP to provide EXCLUSIVE RIGHT-OF-WAY AND/OR AMENITIES FOR BICYCLISTS. This should be provided through the implementation of any of the different types of bicycle facilities, or combinations, previously mentioned in this section of the report. This recommended exclusive bicycle corridors are intended to provide a reliable, connected and continuous infrastructure network with the goal of achieving the City's 2035 multi-modal vision, and have been recommended to prioritize not only bicyclists but also pedestrians. ***Figure 110*** and ***111*** portray the TMP recommended bicycle/pedestrian network; a more detailed description on how these corridors were defined and recommended is provided in the Corridor Analysis section of this document.

Additionally, ***Figures 112*** through ***116*** provide an array of potential typical sections for certain segments of these bicycle/pedestrian corridors. These typical sections were developed using the comprehensive major corridor existing infrastructure inventory (provided in the Corridor Analysis section of this documents) as well as the very thorough Bicycle Pedestrian Master Plan (BPMP) which has been developed concurrently to this TMP. All corridors recommended to prioritize bicyclists and pedestrians have been corroborated with the recommendation provided in the BPMP, which concentrated specially on these two modes of transportation and provides insightful detail to the overall process of developing recommendations to achieve the City's multi-modal vision. The typical sections shown in this section of the TMP should be used as a GUIDE FOR POTENTIAL CONFIGURATIONS of these roadway segments during further stages of projects recommended by this TMP and the BPMP.

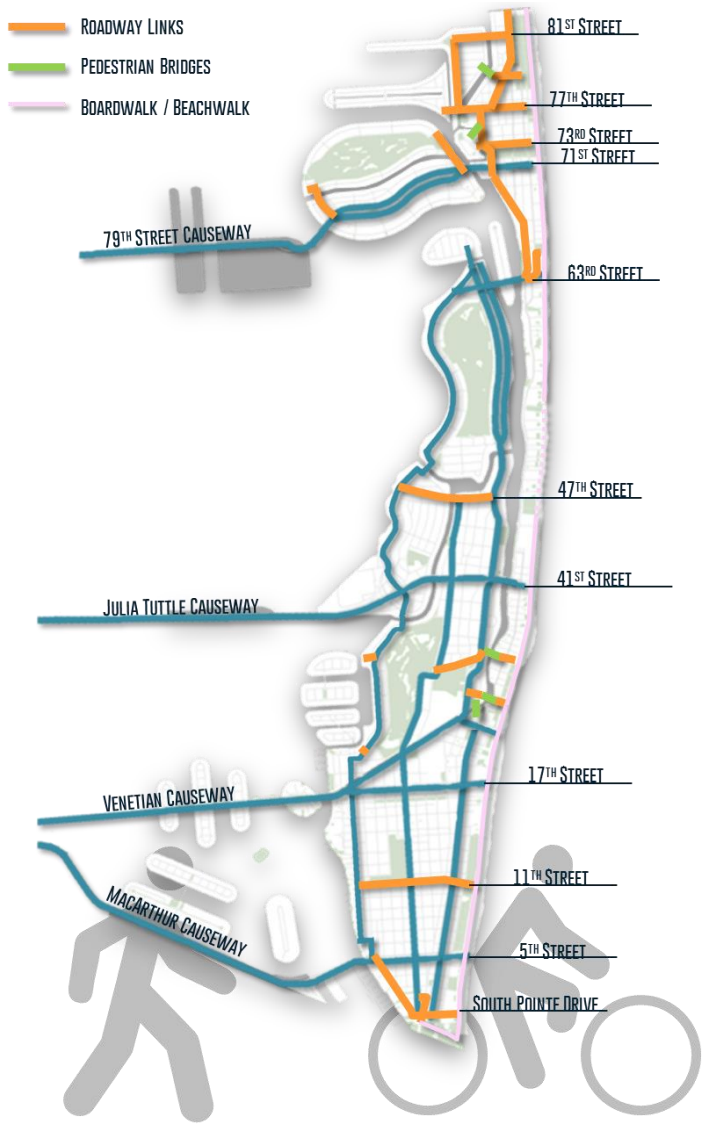


Figure 110: TMP Recommended Bicycle/Pedestrian Priority Corridors

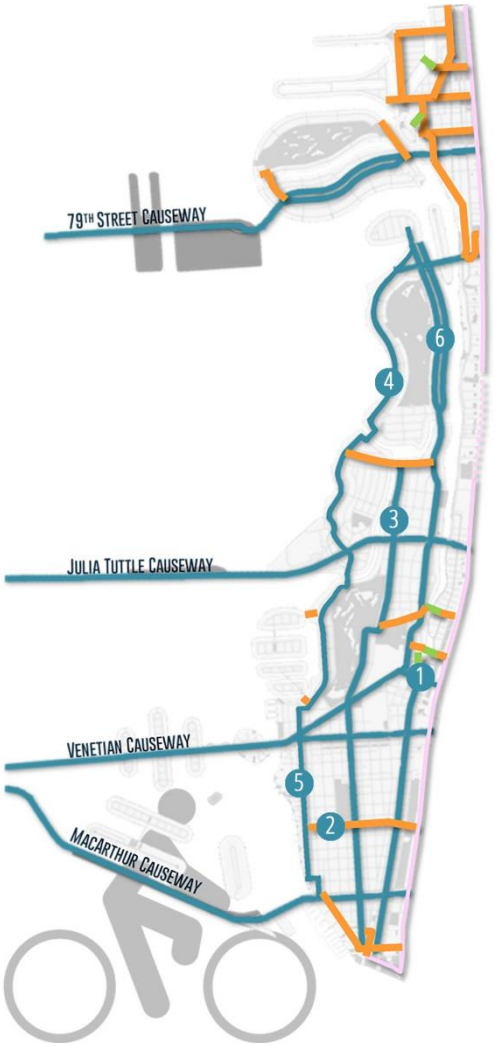


Figure 111: TMP Recommended Bicycle Priority Corridors & Potential Typical Sections Locations

Bicycle Corridor Potential Typical Sections

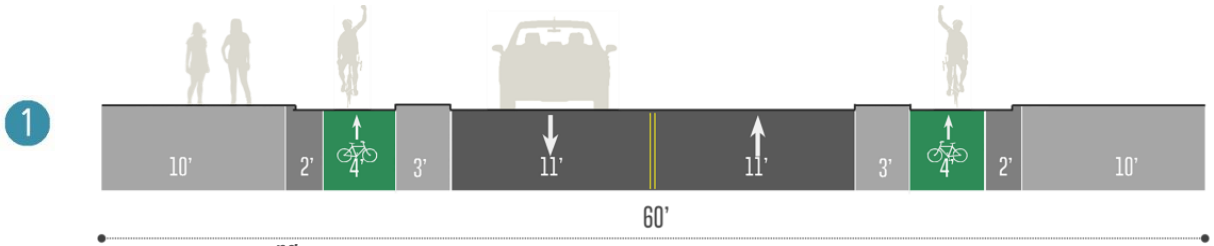


*Figure 112: **22nd Street** Bicycle and Pedestrian Corridor Potential Typical Section from Washington Avenue to the City of Miami Beach Beachwalk*

TMP Project Bank Priority 2: No. 5
This typical section recommends Protected Bicycle Lanes.

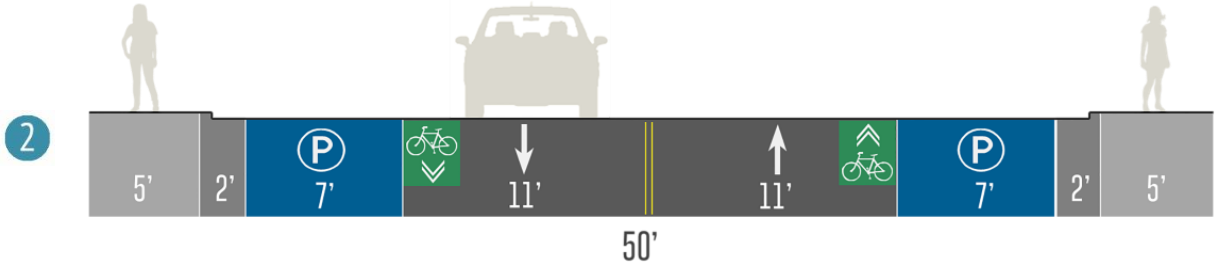


*Figure 113: **11th Street** Bicycle and Pedestrian Corridor Potential Typical Section from West Avenue to Ocean Drive*

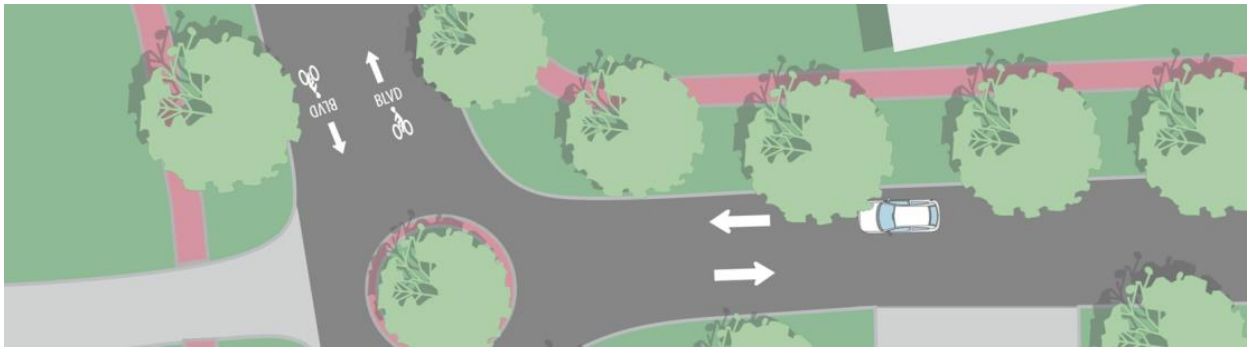
TMP Project Bank Priority 1: No. 42
This typical section recommends a Neighborhood Greenway

.

*Figure 114: **North Bay Road** Bicycle and Pedestrian Corridor Potential Typical Section from West Avenue to La Gorce Drive*

TMP Project Bank Priority 1: No. 11
This typical section recommends a Neighborhood Greenway. This recommendation is consistent with the recommendation from the BPMP.

4

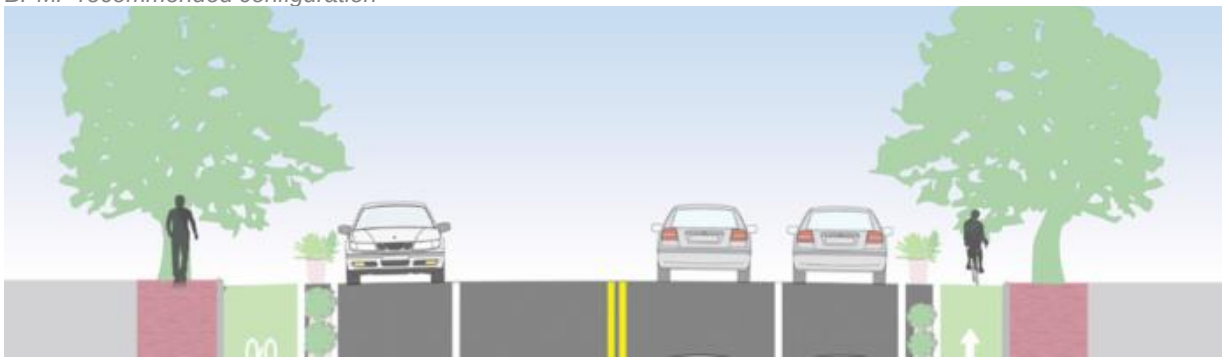


BPMP recommended configuration

*Figure 115: **West Avenue** Bicycle and Pedestrian Corridor Potential Typical Section from 6th Street to 20th Street*

TMP Project Bank Priority 1: No. 7
This typical section recommends Protected Bicycle Lanes. This recommendation is consistent with the recommendation from the BPMP.

5

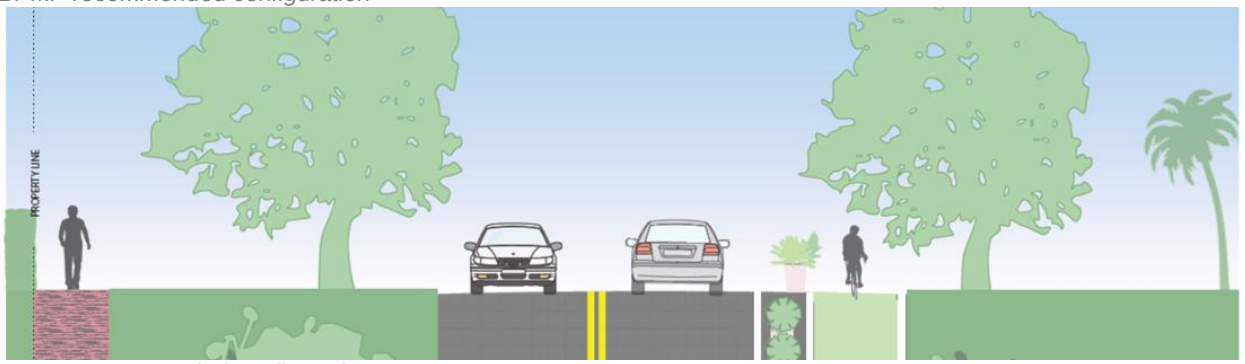


BPMP recommended configuration

*Figure 116: **Pine Tree Drive & La Gorce Drive** Bicycle and Pedestrian Corridor Potential Typical Section from 51st Street to La Gorce Circle*

TMP Project Bank Priority 1: No. 20
This typical section recommends Protected Bicycle Lanes. This recommendation is consistent with the recommendation from the BPMP.

6



BPMP recommended configuration

PROJECTBANK

8. PROJECT BANK

PRIORITY 1 PROJECTS

Table 39: Priority 1 Projects

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
1	**SR A1A / MacArthur Causeway Complete Streets Feasibility Study**	South	Multimodal	Downtown	Collins Avenue	3.80	Review of design alternatives for exclusive transit lanes and bicycle lanes long MacArthur Causeway (Phase I)	SR A1A/MacArthur Causeway requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
2	**Miami Beach Light Rail/Modern Street Car**	South	Multimodal	S.Pointe Drive & SR A1A/5th Street	Washington Avenue & Dade Boulevard	4.55 (Rail Lane) and 4.70 (Protected Bike Lanes)	Exclusive transit and protected/buffered bicycle lanes (Lane repurposing and/or roadway widening)	South Beach requires an improvement for regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
3	**West Avenue Protected Bicycle Lanes**	South	Bike/Ped	6th Street	20th Street	1.3	Protected/buffered bicycle lanes (Lane repurposing), Enhanced crosswalks	West Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
4	**73rd Street One Way Protected Bicycle Lanes**	North	Bike/Ped	Dickens Avenue	Atlantic Trail	0.35	Protected/buffered bicycle lanes (Lane repurposing), Enhanced crosswalks	73rd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
5	**72nd Street One Way Protected Bicycle Lanes**	North	Bike/Ped	Dickens Avenue	Collins Avenue	0.28	Protected/buffered bicycle lanes *(Lane repurposing),* Enhanced crosswalks	72nd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
6	**Byron Avenue Protected Bicycle Lanes/Neighborhood Greenway**	North	Bike/Ped	73rd Street	Hawthorne Avenue	0.56	Protected/buffered bicycle lanes *(Lane repurposing)* from 73rd Street to 75th Street. Neighborhood Greenway from 75th Street to Hawthorne Avenue. Enhanced crosswalks	Byron Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
7	**North Bay Road Neighborhood Greenway** (Including SR 907/Alton Road connecting bridge over Surprise Waterway)	Middle	Bike/Ped	Dade Boulevard	La Gorce Drive	4.6	Neighborhood Greenway*(Boulevard Markers and Traffic Calming) Enhanced crosswalks*	North Bay Road requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
8	**SR 907 / Alton Road and 17th Street Intersection Improvements**	South	Bike/Ped	N/A	N/A	N/A	Review Geometry of the intersection for the addition of an additional left turn lane.	Improved vehicular operations at the Intersection of SR 907 / Alton Road *AND* 17th Street

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
9	**51st Street Green Bicycle Lanes**	Middle	Bike/Ped	Alton Road	Pine Tree Drive	0.4	Enhanced (green) Bicycle Lanes	51st Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
10	**63rd Street: Feasibility Study for Bicycle Alternatives**	Middle	Multimodal	Alton Road	Indian Creek Drive	0.4	Multimodal Feasibility Analysis for bicycle and transit alternatives consistent with the Bicycle Pedestrian Master Plan	63rd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
11	**SR 907 Bicycle Alternatives Analysis and Implementation**	Middle	Bike/Ped	Michigan Avenue	Chase Avenue	0.93	Analysis and implementation of Separated or Protected Bicycle Facilities adjacent to the golf course	Alton Road requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
12	**Dade Boulevard Shared Use Path + Road Diet**	South	Bike/Ped	17th Street	Pine Tree Drive	1	Feasibility Study and Implementation of Shared Use Path Adjacent to Collins Canal with potential road diet on the eastbound approach between SR 907/Alton Road and Michigan Avenue	Dade Boulevard requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
13	**Euclid Avenue Protected Bicycle Lanes**	South	Bike/Ped	2nd Avenue	16th Street	1.15	Protected Bicycle Lanes from 5th Street to 16th Street. Neighborhood Greenway from 3rd Street to 5th Street.	Dade Boulevard requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
14	**Meridian Avenue Bicycle Facilities**	South	Bike/Ped/ Safety/ Capacity	16th Street	Dade Boulevard	0.47	Phase I of the Project includes a geometric feasibility analysis for protected bicycle lanes. The analysis also includes a capacity analysis of the Meridian Avenue and 17th Street Intersection (Priority 1A). Phase II of the project includes implementation based on the results of Phase I.	Meridian Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
15	**Meridian Avenue and 28th Street Shared Use Path**	Middle	Bike/Ped	Dade Boulevard	Pine Tree Drive	0.90	Shared Uses Path *(Lane repurposing) Enhanced crosswalks*	Meridian Avenue and 28th Street require an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
16	**La Gorce Drive / Pine Tree Drive Protected/buffered bicycle lanes**	Middle	Bike&Ped	51st Street	La Gorce Circle	2.69	Protected/buffered bicycle lanes *(Lane repurposing) BPMP Page 158*	La Gorce Drive/Pine Tree Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
17	**6th Street and Michigan Avenue Bicycle Facilities Analysis**	South	Bike/Ped	West Avenue	SR A1A / 2nd Street	0.5	Phase I of the project includes a geometric analysis of the proposed section of the corridor determine what bicycle facilities are appropriate for the corridor. Phase II of the project includes implementation based on the results of Phase I.	6th Street and Michigan Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
18	**SR A1A / 5th Street and SR 907 / Alton Road Intersection Improvements**	South	Bike/Ped	N/A	N/A	N/A	Provide Enhanced Crosswalks and improved sidewalk crossings.	Improve multimodal vehicular operations will be pursued at the Intersection of SR A1A / 5th Street *AND* SR 907 / Alton Road
19	**Dickens Avenue and SR 934 / 71ST Street Geometric Modifications**	North	Roadway	N/A	N/A	N/A	Feasibility study for Geometric Modifications including an additional Southbound Lane	This site requires examination for improved capacity and functionality. Examining the potential addition of a Southbound Lane gives the area the opportunity to improve roadway traffic.
20	**SR A1A / MacArthur Causeway and SR A1A / 5th Street's Feasibility Study of Adaptive Signal Controls**	South	Roadway	Fountain Street	Washington Avenue	2	Feasibility Study of Adaptive Signal Controls	Improve multimodal vehicular operations will be pursued along the corridor of SR A1A / MacArthur Causeway / 5th Street

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
21	**SR 907 / Alton Road's Feasibility Study of Adaptive Signal Controls**	South	Roadway	6th Street	Michigan Avenue	1.5	Feasibility Study of Adaptive Signal Controls	Improve multimodal vehicular operations will be pursued along the corridor of SR 907 / Alton Road
22	**23rd Street's Complete Streets Feasibility Study**	South	Multimodal	Dade Boulevard	SR A1A / Collins Avenue	0.3	Feasibility Study of Complete Streets Design	23rd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
23	**SR A1A / Indian Creek Drive Bicycle/Pedestrian Safety Improvements**	Middle	Roadway	26th Street	SR 112 / 41st Street	0.9	Safety Improvements	Improve multimodal vehicular operations will be pursued along the corridor of Indian Creek Drive from 26th Street to 41st Street

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
24	**Intersection of SR A1A / Indian Creek Drive and 63rd Street and SR A1A / Abbott Avenue's Feasibility Study of Intersection Improvements**	North	Roadway	N/A	N/A	N/A	Feasibility Study of Intersection Improvements	Improve multimodal vehicular operations will be pursued at the Intersection of SR A1A / Indian Creek Drive and 63rd Street and SR A1A / Abbott Avenue
25	**Intersection of SR 907 / Alton Road and 43rd Street/Ed Sullivan Road Feasibility Study of Intersection Improvements**	Middle	Roadway	N/A	N/A	N/A	Feasibility Study of Intersection Improvements	Improve multimodal vehicular operations will be pursued at the Intersection of SR 907 / Alton Road and 43rd Street/Ed Sullivan Road
26	**SR 934 / 71st Street / Normandy Drive Safety Improvements**	North	Roadway	N Shore Drive	SR A1A / Collins Avenue	0.5	Safety Improvements	Improve multimodal vehicular operations will be pursued along the corridor of SR 934 / 71st Street / Normandy Drive

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
27	**SR 112 / Julia Tuttle Causeway s Feasibility Study**	Middle	Multimodal	US-1 / Biscayne Blvd	SR 907 / Alton Road	3.18	Feasibility study for Shared Path, Protected Bike lanes, and Exclusive Bus lanes	SR 112 / Julia Tuttle Causeway requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
28	**85th Street Neighborhood Greenway**	North	Bike/Ped	Stillwater Drive	Atlantic Trail	0.50	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	85th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
29	**SR 907 / Alton Road** **SR 112 / 41st Street** **SR A1A / Indian Creek Drive / Collins Avenue** **Dade Boulevard Proposed Middle Beach**	Middle	Transit	Sullivan Drive (Mt. Sinai Medical Center Entrance) SR 907 / Alton Road SR 112 / 41st Street	SR 112 / 41st Street SR A1A / Indian Creek Drive / Alton Road Dade Boulevard 17th Street	6.4 (Total Distance of One Loop)	Trolley Route from Mt. Sinai Medical Center servicing Mid and South Beach	This project proposes a route which will provide the Middle Beach area of the City with a trolley system to help encourage multimodal alternatives of transportation.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
	Trolley Route			SR A1A / Indian Creek Drive				
30	**SR A1A / Collins Avenue and Indian Creek Drive Signal Optimization Study**	North	Roadway	SR 907 / 63rd Street	SR 934 / 71st Street	0.79	Signal Optimization Feasibility Study on SR A1A	Improve multimodal vehicular operations will be pursued along the corridor of SR A1A / Collins Avenue
31	**SR 934 / 71st Street Feasibility Study**	North	Roadway	Carlyle Avenue	SR A1A / Collins Avenue	1.02	Feasibility Study for removing existing dedicated left turns along 71st Street and review the feasibility of adding an additional westbound lane.	This section of SR 934 / 71st Street stands a chance of improving capacity and functionality by examine the efficiencies of Left turn lanes and their alternatives.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
32	**SR 112 / 41st Street and SR 907 / Alton Road Auxiliary Turn / Shoulder Lane Study**	Middle	Roadway	N/A	N\A	N/A	Feasibility Study for Auxiliary Turn / Shoulder Lane	Improve multimodal vehicular operations will be pursued at the Intersection of SR 112 / 41st Street and SR 907 / Alton Road
33	**Middle Beach Intermodal Station**	Middle	Multimodal	N/A	N/A	N/A	Develop an Intermodal Station to provide multi-modal transfers	This site specific improvement will reach beyond just its immediate area. This station is being designed with the hopes of
34	**SR 112 / Julia Tuttle Cswy Westbound Ramp**	Middle	Roadway	Mount Sinai Hospital	SR 112 / Julia Tuttle Causeway	.25	Westbound on ramp to SR 112 / Julia Tuttle from Mount Sinai Hospital	This project's focus is to helping improving roadway functionality and capacity but providing mitigation of traffic generation from Mount Sinai Hospital

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
35	**10th Street/11th Street Neighborhood Greenway**	South	Bike/Ped	West Avenue	SR A1A / Collins Avenue	0.52	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	10th or 11th Street require an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
36	**SR 907 / Alton Road and Michigan Avenue's Intersection Improvements**	Middle	Bike/Ped	N/A	N/A	N/A	Provide Enhanced Crosswalks. FDOT Project	Improve multimodal vehicular operations will be pursued at the Intersection of SR 907 / Alton Road *AND* Michigan Avenue
37	**Middle Beach Recreational Corridor**	Middle	Bike/Ped	SR A1A / Collins Avenue BLK 4700	SR A1A / Collins Avenue BLK 5400	0.8	Connect the North and South existing Beachwalk segments	The Middle Beach Recreational Corridor has the potential to function as a pedestrian and bicyclist only environment which full connects the North and South portions of the City of Miami Beach. This is the last section of the route that remains as an inconsistent experience for travelers.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
38	**SR A1A / Collins Avenue / Indian Creek Drive and SR 112 / 41st Street's Intersection Safety Study and Improvements**	Middle	Roadway	N/A	N/A	N/A	Intersection Safety Study and Improvements	Improve multimodal vehicular operations will be pursued at the Intersection of A1A / Collins Avenue / Indian Creek Drive *AND* SR 112 / 41st Street
39	**81st Street Neighborhood Greenway**	North	Bike/Ped	Crespi Boulevard	Atlantic Trail	0.36	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	81st Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
40	**77th Street Neighborhood Greenway**	North	Bike/Ped	Dickens Avenue	Collins Avenue	0.28	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	77th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
41	**Tatum Waterway Drive Neighborhood Greenway**	North	Bike/Ped	77th Street	81st Street	0.34	Neighborhood Greenway (Boulevard Markers and Traffic Calming) Enhanced crosswalks	Tatum Waterway Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
42	**Chase Avenue Shared-Use Path Feasibility Study**	Middle	Bike/Ped	Alton Road	34th Street	0.23	Phase I of this project includes a feasibility analysis for a shared-use path adjacent to the golf course. Various constructability concerns were found during the master planning exercise, thus the need for a feasibility analysis. This analysis will also include the intersection Alton Road and Chase Avenue. Phase II of the project will consist of the implementation phase.	Chase Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
43	**Alton Road and North Bay Road Intersection Bicycle Improvements**	Middle	Bike/Ped	Intersection Project	N/A	N/A	Intersection Safety Improvements	The intersection requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
44	**16th Street Bicycle Facilities Improvements**	South	Bike/Ped	Bay Road	Collins Avenue	0.83	Phase I of the project proposes the improvement of the existing Bicycle Lanes by painting them green. Phase II of the project includes the implementation of Protected Bicycle Lanes along the corridor.	16th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
45	**47th Street Enhanced Bicycle Lane**	Middle	Bike/Ped	North Bay Road	Pine Tree Drive	0.66	Enhanced (Green) Bike Lane for the corridor, including the portion between Alton Road and North Bay Road.	47th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
46	**42nd Street Enhance Bicycle Lanes**	Middle	Bike/Ped	Prairie Avenue	Pine Tree Drive	0.25	Enhanced (Green) Bike Lane for the corridor.	42nd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
47	**Bay Drive Neighborhood Greenway**	North	Bike/Ped	West 71st Street	East 71st Street	1.30	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	Bay Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
48	**Royal Palm Avenue Neighborhood Greenway**	Middle	Bike/Ped	28th Street	41st Street	0.55	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	Royal Palm Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
49	**Baywalk**	South	Bike/Ped	5th Street	15th Street	1.05	Feasibility Study and Implementation of Shared Use Path	Baywalk requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
50	**South Beach Pedestrian Priority Zones**	South	Bike/Ped	N/A	N/A	N/A	Designation and formalization of Pedestrian Priority Zones (PPZ)	Phase I of the project includes analysis and implementation of PPZs for the South of 5th Street Neighborhood and the West Avenue Neighborhood. Phase II includes analysis and implementation of the Flamingo Park Neighborhood.

PRIORITY 1

1 SR A1A / MACARTHUR CSWY
2 SR A1A / MACARTHUR CSWY
3 Miami Beach Light Rail /Modern Street Car
4 WEST AVENUE
5 73rd STREET
6 72ND STREET
7 BYRON AVENUE
8 NORTH BAY ROAD
9 ALTON ROAD AND 17TH STREET
10 51ST STREET
11 63rd STREET
12 SR 907 / ALTON ROAD
13 DADE BOULEVARD
14 EUCLID AVENUE
15 MERIDIAN AVENUE
16 MERIDIAN AVENUE:
17 PINE TREE DRIVE/ LAGORCE DRIVE NORTH OF 51ST STREET:
18 6TH STREET/MICHIGAN AVENUE
19 ALTON ROAD AND 5TH STREET
20 DADE BOULEVARD AND 17TH STREET
21 DICKENS AVENUE AND 71ST STREET
22 SR A1A / MACARTHUR CAUSEWAY/5TH STREET
23 SR 907 / ALTON ROAD
24 23RD STREET
25 SR A1A / COLLINS / INDIAN CREEK
26 SR A1A / INDIAN CREEK DRIVE
27 ALTON ROAD AND ED SULLIVAN ROAD
28 SR 934 / 71ST / NORMANDY
29 SR 112 / JULIA TUTTLE CSWY
30 85TH STREET
31 MIDDLE BEACH AND COLLINS LINK
32 SR A1A / COLLINS AND INDIAN CREEK
33 SR 934 / 71ST STREET
34 17TH STREET
35 SR 112/JULIA TUTTLE CSWY RAMPS
36 MIDDLE BEACH
37 SR 112/JULIA TUTTLE CSWY AND 41ST STREET
38 11TH STREET
39 ALTON ROAD AND MICHIGAN AVENUE
40 SR 907/ALTON ROAD
41 Middle Beach Recreational Corridor
42 41ST STREET
43 81st STREET
44 77TH STREET
45 TATUM WATERWAY DRIVE
46 CHASE AVENUE
47 SR 907/ALTON ROAD AND LOWER NORTH BAY ROAD
48 16TH STREET
49 47th STREET
50 42nd STREET
51 BAY DRIVE
52 ROYAL PALM AVENUE
53 BAYWALK
54 SOUTH BEACH

Figure 117: Priority 1 Projects Map

Priority 2 Projects

Table 40: Priority 2 Projects

Project Number	Project Name	City Area	Project Type	From	To	Project Length (Miles)	Project Description	Purpose & Need
1	**17th Street Exclusive transit and protected/buffered bicycle lanes**	South	Transit/Bike& Ped	Washington Avenue	Collins Avenue	0.14	Evaluation of Exclusive transit and/or protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),*	17th Street requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit.
2	**SR A1A / Collins Avenue / Indian Creek Drive Exclusive transit and protected/buffered bicycle lanes**	South / Middle	Transit/Bike& Ped	17th Street	44th Street	2.76	Exclusive transit and protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),* Enhanced crosswalks	SR A1A / Collins Avenue / Indian Creek Drive requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
3	**Meridian Avenue Protected/buffered bicycle lanes**	South / Middle	Bike/Ped	16th Street	28th Street	1.04	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),* Enhanced crosswalks	Meridian Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
4	**69th Street Buffered Bicycle Lanes**	North	Bike/Ped	Indian Creek Drive	Collins Avenue	0.20	Buffered Bicycle Lane	69th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
5	**21st Street and 22nd Street/Park Avenue Protected Bicycle Lanes Feasibility Study**	South	Bike/Ped	Washington Avenue and 23rd Street	Beachwalk	0.6	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),* Enhanced crosswalks	21st & 22nd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
6	**63rd Street Protected/buffered bicycle lanes**	Middle	Bike/Ped	North Bay Road	SR A1A Indian Creek Drive	0.47	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening)*	63rd Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
7	**SR 934 / 71st Street / Normandy Drive Exclusive Transit Lanes/ Protected/buffered bicycle lanes**	North	Bike/Ped	Bay Drive	SR A1A Collins Avenue	2.6	Exclusive Transit Lanes Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	SR 934 / 71st Street / Normandy Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
8	**SR 907 / Alton Road AND SR 112 / 41st Street's Safety Feasibility Study**	North	Bike/Ped	SR 907 / Alton Road	SR 112 / 41st Street	N/A	Safety Feasibility Study	Improve multimodal vehicular operations will be pursued at this intersection of SR 907 / Alton Road AND SR 112 / 41st Street
9	**SR 112 / 41st Street and Pine Tree Drive Safety Feasibility Study**	North	Bike/Ped	SR 112 / 41st Street	Pine Tree Drive	N/A	Safety Feasibility Study	Improve multimodal vehicular operations along the corridor of SR 112 / 41st Street AND Pine Tree Drive

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
10	**44th Street AND SR A1A / Collins Avenue Safety Feasibility Study**	Middle	Bike/Ped	44th Street	SR A1A / Collins Avenue	N/A	Safety Feasibility Study	Improve multimodal vehicular operations along the corridor of 44th Street AND SR A1A / Collins Avenue
11	**Meridian Avenue Bicycle Greenway Analysis**	South	Bike/Ped	1st Street	16th Street	1	Neighborhood Greenway(Boulevard Markers and Traffic Calming) Enhanced crosswalks	Meridian Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
12	**Lincoln Road Shared Space**	South	Bike/Ped	Washington Avenue	Collins Avenue	0.12	Shared Space including changes to pavement and various multi-modal accommodations.	Meridian Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
13	**Lincoln Lane North Bicycle Connection/ Neighborhood Greenway**	South	Bike/Ped	Alton Road	Washington Avenue	0.57	Exploring the various typical sections of the alleyway to create an exclusive bicycle lane or Neighborhood Greenways.	Lincoln Lane North requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
14	**Fairway Drive Shared-Use Path**	North	Bike/Ped	Biarritz Drive	Bay Drive	1.10	Shared-Use Path adjacent to the golf course.	Fairway Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PRIORITY 2

1. 17TH STREET
2. SR A1A / COLLINS AVENUE & INDIAN CREEK:
3. MERIDIAN AVENUE
4. 69TH STREET
5. 21ST STREET AND 22ND STREET
6. 63RD STREET
7. SR 934/71ST STREET AND NORMANDY DRIVE:
8. ALTON ROAD AND 41ST STREET
9. 41ST STREET AND PINE TREE DRIVE
10. COLLINS AVENUE AND 44TH STREET
11. MERIDIAN AVENUE
12. LINCOLN ROAD
13. LINCOLN LANE NORTH
14. FAIRWAY DRIVE

Figure 118: Priority 2 Projects Map

PRIORITY 3 PROJECTS

Table 41: Priority 3 Projects

Project Number	Project Name	City Area	Project Type	From	To	Project Length (Miles)	Project Description	Purpose & Need
1	**SR A1A / Collins Avenue Protected/buffered bicycle lanes**	South	Bike/Ped	South Pointe Drive	17th Street	1.68	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	SR A1A / Collins Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
2	**Prairie Avenue Neighborhood Greenway**	Middle	Bike/Ped	44th Street	47th Street	0.25	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	Prairie Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
3	**SR A1A Collins Avenue Exclusive transit lanes**	Middle	Transit	44th Street	SR A1A Collins Avenue / Indian Creek Drive Split	2	Exclusive transit lanes *(Lane repurposing)*	SR A1A Collins Avenue requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
4	**SR A1A Collins Avenue / Indian Creek Drive Exclusive transit and protected/buffered bicycle lanes**	Middle / North	Transit/ Bike/Ped	SR A1A Collins Avenue / Indian Creek Drive Split	SR 934 / 71st Street	2.05	Exclusive transit and protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),*	SR A1A Collins Avenue / Indian Creek Drive requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
5	**SR 934 / 79th Street Causeway Exclusive transit, Shared Uses Path, and protected/buffered bicycle lanes**	North	Transit/ Bike/Ped	US 1 / Biscayne Boulevard	Bay Drive	2.67	Exclusive transit, Shared Uses Path, and protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening),*	SR 934 / 79th Street Causeway requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
6	**Abbott Avenue Protected/buffered bicycle lanes**	North	Bike/Ped	Indian Creek Drive	SR 934 / 71st Street	0.3	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Abbott Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
7	**77th Street Shared Path**	North	Bike/Ped	Normandy Avenue	Dickens Avenue	0.24	Shared Uses Path*(Lane repurposing and/or roadway widening) Enhanced crosswalks*	77th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
8	**77th Street Neighborhood Greenway**	North	Bike/Ped	Dickens Avenue	Atlantic Way	0.34	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	77th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
9	**81st Street Neighborhood Greenway**	North	Bike/Ped	Tatum Waterway Drive	SR A1A / Collins Avenue	0.19	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	81st Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
10	**South Pointe Drive Protected/buffered bicycle lanes**	South	Bike/Ped	Alton Road	Beachwalk	0.31	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	South Pointe Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
11	**Alton Road Exclusive transit and protected/buffered bicycle lanes**	South	Transit/ Bike/Ped	South Pointe Drive	SR A1A / 5th Street	0.49	Exclusive transit and protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening), Enhanced crosswalks*	Alton Road requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
12	**Washington Avenue Exclusive transit and protected/buffered bicycle lanes**	South	Transit	South Pointe Drive	SR A1A / 5th Street	0.44	Exclusive transit and protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening), Enhanced crosswalks*	Washington Avenue requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
13	**Venetian Causeway Conventional Bike Lanes**	South	Bike/Ped	US 1 / Biscayne Boulevard	West Avenue	3.21	Conventional Bike Lanes*(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Venetian Causeway requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
14	**SR 907 / Alton Road Exclusive transit lanes**	South	Transit	Dade Boulevard	SR 112 / 41st Street	1.46	Exclusive transit lanes *(Lane repurposing)*	SR 907 / Alton Road requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
15	**24th Street / Liberty Avenue Protected/buffered bicycle lanes**	Middle	Bike/Ped	Pine Tree Drive	23rd Street / SR A1A Collins Avenue	0.28	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	24th Street / Liberty Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
16	**Flamingo Drive Protected/buffered bicycle lanes**	Middle	Bike/Ped	Pine Tree Drive	SR A1A / Indian Creek Drive	0.13	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Flamingo Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
17	**Biarritz Drive Protected/buffered bicycle lanes**	North	Bike/Ped	Shore Lane	SR 934 / 71st Street	0.32	Protected/buffered bicycle lanes *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Biarritz Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
18	**Bay Drive Neighborhood Greenway**	North	Bike/Ped	Fairway Drive	SR 934 / 71st Street	0.34	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	Bay Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
19	**Wayne Avenue Shared Path**	North	Bike/Ped	Raymond Street	73rd Street	0.07	Shared Uses Path *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Wayne Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
20	**Wayne Avenue Shared Path**	North	Bike/Ped	Michael Street	75th Street	0.19	Shared Path *(Lane repurposing and/or roadway widening) Enhanced crosswalks*	Wayne Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
21	**SR A1A Collins Avenue / Indian Creek Drive / Harding Avenue Exclusive transit lanes and Protected Bicycle Lanes**	Middle / North	Transit	SR A1A Collins Avenue / Indian Creek Drive Split	88th Street	4.36	Exclusive transit lanes *(Lane repurposing)* and protected Bicycle Lanes along Harding Avenue	SR A1A Collins Avenue / Indian Creek Drive / Harding Avenue requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
22	**Hawthorne Avenue Neighborhood Greenway**	North	Bike/Ped	77th Street	85th Street	0.54	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	Hawthorne Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
23	**85th Street Neighborhood Greenway**	North	Bike/Ped	Hawthorne Avenue	SR A1A / Collins Avenue	0.46	Neighborhood Greenway*(Sharrow Markers) Enhanced crosswalks*	85th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
24	**Pine Tree Drive Protected Bicycle Lanes**	Middle	Bike/Ped	23rd Street	51st Street	2.00	Protected/buffered bicycle lanes (Lane repurposing and/or roadway widening) Enhanced crosswalks	Pine Tree Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
25	**SR A1A / MacArthur Causeway Light Rail Connection/ Shared-Use Path**	South	Transit/ Bike&Ped	US 1 / Biscayne Boulevard	SR 907 / Alton Road	3.41	Light Rail Connection across the Bay/ Protected Bicycle Lanes *(Lane repurposing and/or roadway widening),* Enhanced crosswalks	SR A1A / MacArthur Causeway requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
26	**SR 112 / 41st Street Exclusive transit lanes and protected/buffered bicycle lanes**	Middle	Transit/ Bike/Ped	SR 907 / Alton Road	Beachwalk	0.87	Exclusive transit lanes and protected/buffered bicycle lanes *(Lane repurposing) Enhanced crosswalks*	SR 112/41st Street requires an improvement towards regional and local connectivity. Improve the speed, reliability, comfort and convenience of transit. Serve new markets and support economic vitality.
27	**SR 112 / Julia Tuttle Causeway Exclusive Transit Lane/Shared-Use Path**	Middle	Multimodal	US-1 / Biscayne Blvd	SR 907 / Alton Road	3.18	Exclusive Transit Lane and Shared-Use Path. This project required extensive bridge work.	SR 112 / Julia Tuttle Causeway requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
28	**SR A1A/ Indian Creek Drive Protected Bicycle Lanes**	North	Bike/Ped	Abbott Avenue	Dickens Avenue	0.33	Protected Bicycle Lanes (Lane repurposing and/or roadway widening)	That section of Indian Creek Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
29	**15th Street Neighborhood Greenway**	South	Bike/Ped	Washington Avenue	West Avenue	0.66	Neighborhood Greenway *(Bicycle Boulevard Markers) Enhanced crosswalks*	15th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
30	**20 Street Neighborhood Greenway**	South	Bike/Ped	Purdy Avenue	Sunset Drive	0.25	Neighborhood Greenway *(Bicycle Boulevard Markers) Enhanced crosswalks*	20th Street requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PROJECT NUMBER	PROJECT NAME	CITY AREA	PROJECT TYPE	FROM	TO	PROJECT LENGTH (MILES)	PROJECT DESCRIPTION	PURPOSE & NEED
31	**Ocean Drive Shared Space**	South	Bike/Ped	5th Street	15th Street	0.90	Shared Space (Public Space) allowing for easy closures for events, calming traffic, and improved pedestrian space.	Ocean Drive requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
32	**Crespi Avenue Neighborhood Greenway**	North	Bike/Ped	Hawthorne Avenue	85th Street	0.22	Neighborhood Greenway (Bicycle Boulevard Markers) Enhanced crosswalks	Crespi Boulevard requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.
33	**Purdy Avenue Neighborhood Greenway**	South	Bike/Ped	Dade Boulevard	20th Street	0.26	Neighborhood Greenway (Bicycle Boulevard Markers) Enhanced crosswalks	Purdy Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

Project Number	Project Name	City Area	Project Type	From	To	Project Length (Miles)	Project Description	Purpose & Need
34	**Drexel Avenue Neighborhood Greenway**	South	Bike/Ped	Espanola Way	17th Street	0.40	Neighborhood Greenway (Bicycle Boulevard Markers) Enhanced crosswalks	Drexel Avenue requires an improvement towards local non-motorized transportation infrastructure connectivity. Develop a safe, complete, and accessible multi-user citywide bicycle and pedestrian network. Promote non-motorized transportation as a reliable mode of travel within the City.

PRIORITY 3

1. SR A1A / COLLINS AVENUE
2. PRAIRIE AVENUE
3. SR A1A / COLLINS AVENUE/INDIAN CREEK DRIVE
4. SR A1A / COLLINS AVENUE/INDIAN CREEK DRIVE
5. SR 934 / 79TH CAUSEWAY
6. ABBOTT AVENUE
7. 77TH STREET
8. 77TH STREET
9. 81ST STREET
10. SOUTH POINTE DRIVE
11. ALTON ROAD
12. WASHINGTON AVENUE
13. VENETIAN CAUSEWAY
14. SR 907 / ALTON ROAD
15. 24TH STREET / LIBERTY AVENUE
16. FLAMINGO DRIVE/ INDIAN CREEK DRIVE
17. BIARRITZ DRIVE
18. BAY DRIVE:
19. PARK VIEW BRIDGE I (WAYNE AVENUE)
20. PARK VIEW BRIDGE II (WAYNE AVENUE)
21. HARDING AVENUE/ COLLINS AVENUE
22. HAWTHORNE AVENUE
23. 85TH STREET
24. PINE TREE DRIVE
25. SR A1A/ MACARTHUR CAUSEWAY
26. SR 112/41st Street
27. SR 112/ JULIA TUTTLE CAUSEWAY
28. SR A1A/INDIAN CREEK DRIVE
29. 15TH STREET
30. 20TH STREET:
31. OCEAN DRIVE
32. CRESPI AVENUE
33. PURDY AVENUE
34. DREXEL AVENUE

Figure 119: Priority 3 Projects Map

POTENTIAL COSTS

For all projects included in the project bank planning and development, design, and construction costs were estimated. Using industry accepted assumptions and engineering judgement, planning and development costs were assumed to be 5% to 10% of the construction costs while design costs were assumed to be 15% of the same. For the different variety and type of projects proposed, several sources were used to identify an estimated construction unit cost for a specific type of improvement. These sources come from the state, city, and other municipalities. Projects which include a combination of improvements were estimated by adding the unit costs for each improvement. Most of the unit costs obtained are on a per mile basis meaning that the calculated construction cost is proportional to the project length. **Table 42** lists the sources, type of improvement, and estimated construction unit cost used. **Tables 43 through 45** display the potential costs for the planning, design and construction phases of this TMP's recommended projects

Table 42: Sources for Estimation of Potential Project Costs

Source	Improvement Type	Improvement	Unit	Costs			Notes
				PE Design	**Construction + CEI**	**Total Cost**	
FDOT D7 Roadway Cost per Centerline Mile (Revised June 2014)	Roadway	Urban Arterial New Construction (2-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$1,098,217**	**$8,419,661**	$9,517,877	-
		Urban Arterial New Construction (4-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$1,550,181**	**$11,884,720**	$13,434,900	-
		Urban Arterial New Construction (6-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$1,895,171**	**$14,529,646**	$16,424,818	-
		Urban Arterial Milling and Resurfacing (4-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$278,442**	**$2,134,725**	$2,413,168	-
		Urban Arterial Milling and Resurfacing (6-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$2,632,764**	**$3,027,679**	$3,422,593	-
		Urban Arterial Add 1 Through Lane on Inside (To Existing) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$203,029**	**$1,556,556**	$1,759,585	-
		Urban Arterial Add 1 Through Lane on Outside (To Existing) with 5' Sidewalk, and Curb & Gutter	$/CL MI	**$549,245**	**$4,210,877**	$4,760,121	-
		Urban Arterial Add 300' Exclusive Left Turn Lane	$/EA	**$15,625**	**$119,793**	$135,418	
		Urban Arterial Add 300' Exclusive Right Turn Lane	$/EA	**$32,769**	**$251,228**	$283,996	
	Traffic Signal (Mast Arm Assembly on Four Legs)	2-Lane Roadway Intersecting 2-Lane Roadway	$/Intersection	**$37,887**	**$290,470**	$328,358	-
		4-Lane Roadway Intersecting 4-Lane Roadway	$/Intersection	**$47,801**	**$366,477**	$414,279	-
		4-Lane Roadway Intersecting 2-Lane Roadway	$/Intersection	**$42,844**	**$328,474**	$371,319	-
		6-Lane Roadway Intersecting 6-Lane Roadway	$/Intersection	**$53,072**	**$406,887**	$459,959	-
	Bike/Ped	Sidewalks Per Mile (5' Width – 1 Side)	$/MI	**$20,136**	**$154,378**	$174,514	-

SOURCE	IMPROVEMENT TYPE	IMPROVEMENT	UNIT	COSTS			NOTES
	Facilities	Sidewalks Per Mile (6' Width – 1 Side)	$/MI	**$24,164**	**$185,254**	$209,417	-
		Multi-Use Trail Per Mile (12' Width – 1 Side)	$/MI	**$38,496**	**$295,139**	$333,635	-
	Median Retrofit	Convert 14' Center Turn Lane to 14' Raised Median (Per Mile)	$/MI	**$46,984**	**$360,212**	$407,197	-
				Construction			
				Low	**Average**	**High**	
FDOT Structures Manual 2015 BDR Cost Estimates (Vol. 1, Ch. 9)	Structures	Short Span Bridge Reinforced Concrete Flat Slab- Simple Span	$/SQ FT	$115	**$138**	$160	Plus 3% for construction over water
	Structures	Short Span Bridge Pre-cast Concrete Slab – Simple Span	$/SQ FT	$110	**$155**	$200	
	Structures	Medium Span Bridge Concrete Deck / Steel Girder – Simple Span	$/SQ FT	$125	**$134**	$142	
	Structures	Medium Span Bridgs Concrete Deck / Steel Girder – Continuous Span	$/SQ FT	$135	**$153**	$170	
	Structures	Medium Span Bridge Concrete Deck / Prestressed Girder – Simple Span	$/SQ FT	$90	**$118**	$145	
	Structures	Medium Span Bridge Concrete Deck / Prestressed Girder – Continuous Span	$/SQ FT	$95	**$153**	$211	
	Structures	Bascule	$/SQ FT	$60	**$65**	$70	
	Structures	Widening (Construction Only)	$/SQ FT	$85	**$123**	$160	
				Capital Cost			
City of Miami Beach	Light Rail/Modern Streetcar	Light Rail/Modern Streetcar Project including two routes from NW 1st Street to SR A1A/Collins Avenue and from SR A1A/5th Street to Dade Boulevard	Complete Project		**$350,000,000**		
				Capital Cost			
Short-Term Beach Connection Transit Study Final Technical Memorandum	Transit	Repurpousing Two Existing Travel Lane as Exclusive Bus Lanes (Only Including Resurfacing, Signing, Pavement Markings, New Curb Bulb-outs (plus 5% for minor drainage), Colored Asphalt, 20% Mobilization/MOT, and 25% Scope Contingency)	$/1.65 MI	-	**$596,922**	-	$864,880.00 was the cheapest alternative included in this study for repurposing two travel lanes on Washington Avenue and including, in addition to other mentioned improveme
		Repurpousing Existing Travel Lane as Exclusive Bus Lanes (Only Including Resurfacing, Signing, Pavement Markings, New Curb Bulb-outs (plus 5% for minor drainage), Colored Asphalt, 20% Mobilization/MOT, and 25% Scope Contingency)	$/MI	-	**$361,771**	-	

Source	Improvement Type	Improvement	Unit	Costs			Notes
							nts, enforcement cameras and new bus shelters
					Capital Cost		
NACTO Urban Bikeway Design Guide	Bike	Colored Aslphalt	TN	-	**$730**	-	-
					Capital Cost		
April 9, 2014 Land Use and Development Committee Memorandum: Discussion on Beachwalk Uniformity	Ped	Average Cost of Replacing Elevated Boardwalk with At-grade Pavers	$/MI	-	**$6,258,458**	-	-
					Capital Cost		
North Beach Trolley Capital Cost Per Mile	Transit	Trolley Loop in Miami Beach	$/MI	-	**$11,000**	-	-
					Capital Cost		
ITS SCATS Initial Capital Cost Per Intersection	ITS	Installing Adaptive Signal Controls	$/Intersection	-	**$30,000**	-	-
					Capital Cost		

Source	Improvement Type	Improvement	Unit	Costs			Notes
Doral Transportation Master Plan	ITS	Planning ITS and Signal Timing Projects	$/Intersection	-	**$75,000**	-	-
				Capital Cost			
City of Miami Beach	Study	Safety Study	$/Study	-	**$50,000**	-	-
				Capital Cost			
City of Miami Beach Transportation Element 2009	Study	Average Cost of a Feasibility Study	$/Study	-	**$125,715**	-	**Average Cost per Feasibility Study**
Miami-Dade MPO Unified Planning Work Program Years 2015 – 2008	Study	Average Cost of a Feasibility Study	$/Study	-	**$65,877**	-	**$95,796**
				Design Cost	**Construction Cost**	**Total Cost**	
Miami-Dade MPO Downtown Miami Terminal Feasibility Study	Transit	St. Louis Gateway Transportation Center	$/Intermodal Station	$600,000	$7,400,000	$8,000,000	**Average Construction Cost per Intermodal Station**
		Downtown Denton Transit Center & TOD	$/Intermodal Station	$360,000	$1,800,000	$2,160,000	
				Capital Cost			

Source	Improvement Type	Improvement	Unit	Costs			Notes
Miami-Dade MPO Palmetto Station Intermodal Terminal Feasibility Study	Transit	Site Development Costs of Phase I (Intermodal terminal plaza, parking lot, access roadways 24 ft wide, landscaping, and site utilities)	$/Intermodal Station	-	$3,082,200	-	**$4,094,067**

Note: **Bolded** figures for each of the improvement types were the ones used to estimate the potential costs of projects.

Priority 1 Projects

Table 43: Potential Costs for Priority 1 Projects

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
1	**SR A1A / MacArthur Causeway Complete Streets Feasibility Study**	South	Multimodal	3.8	$113,000	$2,700,000	17,700,000	**$20,513,000**
2	**Miami Beach Light Rail/Modern Street Car**	South	Multimodal	4.55 (Rail Lane) and 4.70 (Protected Bike Lanes)	$10,000,000	$360,000,000		**$370,000,000**
3	**West Avenue Protected Bicycle Lanes**	South	Bike/Ped	1.3	-	-	$530,000	**$530,000**
4	**73rd Street One Way Protected Bicycle Lanes**	North	Bike/Ped	0.35	$139,000	$100,000	$3,820,000	**$4,059,000**
5	**72nd Street One Way Protected Bicycle Lanes**	North	Bike/Ped	0.28	$139,000	$100,000	$3,820,000	**$4,059,000**
6	**Byron Avenue Protected Bicycle Lanes/Neighborhood Greenway**	North	Bike/Ped	0.56	$50,000	-	$800,000	**$850,000**
7	**North Bay Road Neighborhood Greenway (Including SR 907/Alton Road Connecting Bridge)**	Middle	Bike/Ped	4.6	$100,000	$100,000	$3,750,000	**$3,950,000**
8	**SR 907 / Alton Road and 17th Street Intersection Improvements**	South	Bike/Ped	N/A	$50,000	$330,000	$2,910,000	**$3,290,000**
9	**51st Street Green Bicycle Lanes**	Middle	Bike/Ped	0.4	$10,000		$40,000	**$50,000**
10	**63rd Street: Feasibility Study for Multimodal Alternatives**	Middle	Multimodal	0.4	$100,000	-	-	**$100,000**
11	**SR 907 Bicycle Alternatives Analysis and Implementation**	Middle	Bike/Ped	0.93	$50,000		$368,000	**$418,000**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
12	**Dade Boulevard Shared Use Path + Road Diet**	South	Bike/Ped	1.00	$207,000		$3,880,000	**$4,087,000**
13	**Euclid Avenue Protected Bicycle Lanes**	South	Bike/Ped	1.15	-	$50,000	$420,000	**$470,000**
14	**Meridian Avenue Bicycle Facilities**	South	Bike/Ped/ Safety/ Capacity	0.47	-	$75,000	$3,320,000	**$3,395,000**
15	**Meridian Avenue and 28th Street Shared Use Path**	Middle	Bike/Ped	0.9	-	$75,000	$343,000	**$418,000**
16	**La Gorce Drive / Pine Tree Drive Protected/buffered bicycle lanes**	Middle	Bike&Ped	2.69	$1,068,000		$21,360,000	**$22,428,000**
17	**6th Street and Michigan Avenue Bicycle Facilities Feasibility Analysis**	South	Bike/Ped	0.5	$50,000	-	-	**$50,000**
18	**SR A1A / 5th Street and SR 907 / Alton Road Intersection Improvements**	South	Bike/Ped	N/A	$50,000	-	-	**$50,000**
19	**Dickens Avenue and SR 934 / 71ST Street Geometric Modifications**	North	Roadway	N/A	$50,000	-	-	**$50,000**
20	**SR A1A / MacArthur Causeway and SR A1A / 5th Street's Implementation of Adaptive Signal Controls**	South	Roadway	2	$15,000	$435,000		**$450,000**
21	**SR 907 / Alton Road's Implementation of Adaptive Signal Controls**	South	Roadway	1.5	$15,000	$685,000		**$700,000**
22	**23rd Street's Complete Streets Feasibility Study**	South	Multimodal	0.3	$100,000	$250,000	$1,950,000	**$2,300,000**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
23	**SR A1A / Indian Creek Drive Bicycle/Pedestrian Safety Improvements**	Middle	Roadway	0.9	-	$15,000	$95,000	**$110,000**
24	**Intersection of SR A1A / Indian Creek Drive and 63rd Street and SR A1A / Abbott Avenue's Feasibility Study of Intersection Improvements**	North	Roadway	N/A	$50,000	-	-	**$50,000**
25	**Intersection of SR 907 / Alton Road and Sullivan Drive's (Mt. Sinai Entrance) Feasibility Study of Intersection Improvements**	Middle	Roadway	N/A	$50,000	-	-	**$50,000**
26	**SR 934 / 71st Street / Normandy Drive Safety Improvements**	North	Roadway	0.5	$50,000	-	-	**$50,000**
27	**SR 112 / Julia Tuttle Causeway Feasibility Study**	Middle	Multimodal	3.18	$100,000	$110,000	$2,400,000	**$2,610,000**
28	**85th Street Neighborhood Greenway**	North	Bike/Ped	0.5	$50,000	$75,000	$1,081,000	**$1,206,000**
29	**SR 907 / Alton Road SR 112 / 41st Street SR A1A / Indian Creek Drive / Collins Avenue Dade Boulevard Proposed Middle Beach Trolley Route**	Middle	Transit	6.4 (Total Distance of One Loop)	Operations: $5,300,000 per year			**$5,300,000**
30	**SR A1A / Collins Avenue and Indian Creek Drive Signal Optimization Study**	North	Roadway	0.79	-	$100,000		**$100,000**
31	**SR 934 / 71st Street Feasibility Study**	North	Roadway	1.02	$75,000	-	-	**$75,000**
32	**SR 112 / 41st Street and SR 907 / Alton Road Auxiliary Turn / Shoulder Lane**	Middle	Roadway	N/A	$50,000	$100,000	$252,000	**$402,000**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
	Study							
33	**Middle Beach Intermodal Station**	Middle	Multimodal	N/A	$120,000	$360,000	$4,095,000	**$4,575,000**
34	**SR 112 / Julia Tuttle Cswy Westbound Ramp**	Middle	Roadway	0.25	$50,000	-	-	**$50,000**
35	**10th Street / 11th Street Neighborhood Greenway**	South	Bike/Ped	0.52	$65,000	$165,000	$1,264,000	**$1,494,000**
36	**SR 907 / Alton Road and Michigan Avenue's Intersection Improvements.**	Middle	Bike/Ped	N/A	-	-	$2,600,000	**$2,600,000**
37	**Middle Beach Recreational Corridor**	Middle	Bike/Ped	0.8	-	$533,520	$12,200,000	**$12,733,520**
38	**SR A1A / Collins Avenue / Indian Creek Drive and SR 112 / 41st Street's Intersection Safety Study and Improvements**	Middle	Roadway	N/A	$50,000	-	-	**$50,000**
39	**81st Street Neighborhood Greenway**	North	Bike/Ped	0.36	$45,000	$45,000	$875,000	**$965,000**
40	**77th Street Neighborhood Greenway**	North	Bike/Ped	0.28	$68,000	$89,000	$685,000	**$842,000**
41	**Tatum Waterway Drive Neighborhood Greenway**	North	Bike/Ped	0.34	$50,000	-	$830,000	**$880,000**
42	**Chase Avenue Shared-Use Path Feasibility Study**	Middle	Bike/Ped	0.23	$30,000	$45,000	$110,000	**$179,322**
43	**Alton Road and North Bay Road Intersection Bicycle Improvements**	Middle	Bike/Ped	N/A	$50,000	-	-	**$50,000**
44	**16th Street Protected Bicycle Lanes**	South	Bike/Ped	0.83	-	$100,000	$827,000	**$927,000**
45	**47th Street Enhanced Bicycle Lane**	Middle	Bike/Ped	0.66	-	-	$210,000	**$210,000**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
46	**42nd Street Enhance Bicycle Lanes**	Middle	Bike/Ped	0.25	-	-	$150,000	**$150,000**
47	**Bay Drive Neighborhood Greenway**	North	Bike/Ped	1.3	$100,000	$100,000	$3,200,000	**$3,400,000**
48	**Royal Palm Avenue Neighborhood Greenway**	Middle	Bike/Ped	0.55	$50,000	$85,000	$850,000	**$985,000**
49	**Baywalk**	South	Bike/Ped	1.05	$31,000	$41,000	$310,000	**$382,000**
50	**South Beach Pedestrian Priority Zone**	South	Bike/Ped	N/A	$300,000	$300,000	$1,500,000	**$2,100,000**
Total Potential Cost for Priority 1 Projects								**$482,745,890**

Priority 2 Projects

Table 44: Potential Costs for Priority 2 Projects

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
1	**17th Street Exclusive transit and protected/buffered bicycle lanes**	South	Transit/Bike&Ped	0.14	$116,230	$465,895	$1,162,300	**$1,744,425**
2	**SR A1A / Collins Avenue / Indian Creek Drive Exclusive transit and protected/buffered bicycle lanes**	South / Middle	Transit/Bike&Ped	2.76	$1,145,696	$9,184,771	$22,913,906	**$33,244,373**
3	**Meridian Avenue Protected/buffered bicycle lanes**	South / Middle	Bike&Ped	1.04	$366,466	$955,997	$7,329,312	**$8,651,775**
4	**69th Street Buffered Bicycle Lanes**	North	Bike/Ped	0.2	$64,070	$183,846	$1,281,400	**$1,529,316**
5	**21st Street and 22nd Street/Park Avenue Protected Bicycle Lanes Feasibility Study**	South	Bike/Ped	0.6	$264,553	$345,068	$2,645,526	**$3,255,147**
6	**63rd Street Protected/buffered bicycle lanes**	Middle	Bike&Ped	0.47	$222,220	$1,116,646	$2,222,198	**$3,561,064**
7	**SR 934 / 71st Street / Normandy Drive Exclusive Transit Lanes/ Protected/buffered bicycle lanes**	North	Bike&Ped	2.6	$1,003,587	$7,335,939	$20,071,725	**$28,411,251**
8	**SR 907 / Alton Road AND SR 112 / 41st Street's Safety Feasibility Study**	North	Bike&Ped	N/A	$95,796	-	-	**$95,796**
9	**SR 112 / 41st Street and Pine Tree Drive Safety Feasibility Study**	North	Bike&Ped	N/A	$95,796	-	-	**$95,796**
10	**44th Street AND SR A1A / Collins Avenue Safety Feasibility Study**	Middle	Bike&Ped	N/A	$95,796	-	-	**$95,796**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
11	**Meridian Avenue Bicycle Greenway Analysis**	South	Bike/Ped	1	$242,987	$316,938	$2,429,864	**$2,989,789**
12	**Lincoln Road Shared Space**	South	Bike/Ped	0.12	$36,333	$315,932	$363,322	**$715,587**
13	**Lincoln Lane North Bicycle Connection/ Neighborhood Greenway**	South	Bike/Ped	0.57	$138,503	$180,655	$1,385,023	**$1,704,181**
14	**Fairway Drive Shared-Use Path**	North	Bike/Ped	1.1	$32,466	$42,346	$324,653	**$399,465**
Total Potential Cost for Priority 2 Projects								**$86,493,761**

Priority 3 Projects

Table 45: Potential Costs for Priority 3 Projects

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
1	**SR A1A / Collins Avenue Protected/buffered bicycle lanes**	South	Bike/Ped	1.68	$591,983	$1,544,303	$11,839,657	**$13,975,943**
2	**Prairie Avenue Neighborhood Greenway**	Middle	Bike/Ped	0.25	$34,063	$44,430	$340,626	**$419,119**
3	**SR A1A Collins Avenue Exclusive transit lanes**	Middle	Transit	2	$338,945	$5,374,060	$6,778,900	**$12,491,905**
4	**SR A1A Collins Avenue / Indian Creek Drive Exclusive transit and protected/buffered bicycle lanes**	Middle / North	Transit/ Bike/Ped	2.05	$850,970	$7,452,408	$17,019,387	**$25,322,765**
5	**SR 934 / 79th Street Causeway Exclusive transit, Shared Uses Path, and protected/buffered bicycle lanes**	North	Transit/ Bike/Ped	2.67	$1,378,742	$7,126,692	$27,574,824	**$36,080,258**
6	**Abbott Avenue Protected/buffered bicycle lanes**	North	Bike/Ped	0.3	$105,712	$275,769	$2,114,225	**$2,495,706**
7	**77th Street Shared Path**	North	Bike/Ped	0.24	$7,084	$9,240	$70,834	**$87,158**
8	**77th Street Neighborhood Greenway**	North	Bike/Ped	0.34	$23,163	$60,424	$463,251	**$546,838**
9	**81st Street Neighborhood Greenway**	North	Bike/Ped	0.19	$12,944	$33,767	$258,876	**$305,587**
10	**South Pointe Drive Protected/buffered bicycle lanes**	South	Bike/Ped	0.31	$109,235	$284,961	$2,184,699	**$2,578,895**
11	**Alton Road Exclusive transit and protected/buffered bicycle lanes**	South	Transit/ Bike/Ped	0.49	$181,526	$477,012	$3,630,502	**$4,289,040**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
12	**Washington Avenue Exclusive transit and protected/buffered bicycle lanes**	South	Transit	0.44	$163,003	$428,338	$3,260,042	**$3,851,383**
13	**Venetian Causeway Conventional Bike Lanes**	South	Bike/Ped	3.21	$821,774	$2,252,219	$16,435,476	**$19,509,469**
14	**SR 907 / Alton Road Exclusive transit lanes**	South	Transit	1.46	$893,994	$2,342,493	$17,879,877	**$21,116,364**
15	**24th Street / Liberty Avenue Protected/buffered bicycle lanes**	Middle	Bike/Ped	0.28	$98,664	$257,384	$1,973,277	**$2,329,325**
16	**Flamingo Drive Protected/buffered bicycle lanes**	Middle	Bike/Ped	0.13	$45,809	$119,500	$916,164	**$1,081,473**
17	**Biarritz Drive Protected/buffered bicycle lanes**	North	Bike/Ped	0.32	$112,759	$294,153	$2,255,173	**$2,662,085**
18	**Bay Drive Neighborhood Greenway**	North	Bike/Ped	0.34	$41,308	$107,759	$826,154	**$975,221**
19	**Wayne Avenue Shared Path**	North	Bike/Ped	0.07	$2,066	$2,695	$20,660	**$25,421**
20	**Wayne Avenue Shared Path**	North	Bike/Ped	0.19	$5,608	$7,315	$56,077	**$69,000**
21	**SR A1A Collins Avenue / Indian Creek Drive / Harding Avenue Exclusive transit lanes and Protected Bicycle Lanes**	Middle / North	Transit	4.36	$1,809,867	$14,509,276	$36,197,330	**$52,516,473**
22	**Hawthorne Avenue Neighborhood Greenway**	North	Bike/Ped	0.54	$65,607	$171,147	$1,312,127	**$1,548,881**
23	**85th Street Neighborhood Greenway**	North	Bike/Ped	0.46	$55,887	$145,792	$1,117,738	**$1,319,417**
24	**Pine Tree Drive Protected Bicycle Lanes**	Middle	Bike/Ped	2	$704,742	$1,838,456	$14,094,830	**$16,638,028**

Project Number	Project Name	City Area	Project Type	Project Length (Miles)	Costs			
					Feasibility	Design	Construction	Total
25	**SR A1A / MacArthur Causeway Light Rail Connection/ Shared-Use Path**	South	Transit/ Bike&Ped	3.41	$4,925,900	$14,777,698	$98,517,982	**$118,221,580**
26	**SR 112 / 41st Street Exclusive transit lanes and protected/buffered bicycle lanes**	Middle	Transit/ Bike/Ped	0.87	$367,601	$1,027,830	$7,352,009	**$8,747,440**
27	**SR 112 / Julia Tuttle Causeway Exclusive Transit Lane/Shared-Use Path**	Middle	Multimodal	3.18	$3,882,675	$11,603,847	$77,653,494	**$93,140,016**
28	**SR A1A/ Indian Creek Drive Protected Bicycle Lanes**	North	Bike/Ped	0.33	$116,283	$303,346	$2,325,647	**$2,745,276**
29	**15th Street Neighborhood Greenway**	South	Bike/Ped	0.66	$80,186	$209,180	$1,603,711	**$1,893,077**
30	**20 Street Neighborhood Greenway**	South	Bike/Ped	0.25	$30,374	$79,235	$607,466	**$717,075**
31	**Ocean Drive Shared Space**	South	Bike/Ped	0.9	$13,282	$34,647	$265,626	**$313,555**
32	**Crespi Avenue Neighborhood Greenway**	North	Bike/Ped	0.22	$26,729	$69,727	$534,571	**$631,027**
33	**Purdy Avenue Neighborhood Greenway**	South	Bike/Ped	0.26	$31,589	$82,404	$631,765	**$745,758**
34	**Drexel Avenue Neighborhood Greenway**	South	Bike/Ped	0.4	$48,598	$126,776	$971,946	**$1,147,320**
Total Potential Cost for Priority 3 Projects								**$450,537,878**

PROJECT FINANCING

9. PROJECT FINANCING

With the estimated COSTS for all of the recommended improvements TOTALING close to $1.14 BILLION, finding sufficient funding sources becomes crucial to effectively implement this TMP. The CITY'S YEARLY REVENUE SOURCES only amount to a FRACTION OF THESE COSTS and thus it is imperative to recognize all available funding options to make these projects a reality. Planning for proper allocations and commitments from these potential funding sources is a multifaceted challenge since other municipalities and cities may be competing for the same funds and the reliability of available adequate funds is threatened by declining revenue (e.g. gas taxes will continue to generate less revenue due to more fuel efficient or electrical vehicles replacing older vehicles). In addition, funding for specific project types may also be taken advantage of if properly planned and executed. This is why it is essential for each of the projects recommended by this TMP to undergo more in-depth analyses to better assess their feasibility, not only structurally but also financially. A list of the available transportation funding sources follows with a description of each.

SOURCE	GENERAL DESCRIPTION	OPTIONS
FEDERAL	The United States Department of Transportation (USDOT) manages federal funds distributed to each state. These funds come from the annual federal budget which is financed by federal taxes. Federal revenue sources include both Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funds, and they may be either formula-based (automatically allocated) or discretionary (competitive grant process) depending on the program. The majority of the funds for of highway improvement projects are typically automatically allocated by FHWA through FDOT; while transit improvement projects usually must go through discretionary FTA processes for funding, which are highly competitive and very stringent on the cost-effectiveness of the projects and the ability to successfully build, operate ,and maintain of the competing entities.	FEDERAL HIGHWAY ADMINISTRATION (FHWA) **FDOT Capacity Programs** • National Highway System (NHS) Program: ○ For improvements on roads that are part of the National Highway System (including transit) • Surface Transportation Program (STP) ○ For improvements on Federal-Aid Highways, bridge projects, transit capital projects, railway/highway crossing safety projects, transportation enhancements, and intercity bus terminals/facilities ○ Section 133 of Title 23 of the United States Code mandates that at least **10 percent** of STP funds shall be used only for "transportation enhancement" (TE) activities. Projects will be stratified into one of three categories, which include the following TE classifications: ○ Bicycle and Pedestrian Projects ○ Scenic and Environmental Projects ○ Historic Preservation and Archeology **FDOT Non-Capacity Programs** Interstate Maintenance Program (IMP) Highway Bridge Replacement and Rehabilitation Program (HBRRP)

SOURCE	GENERAL DESCRIPTION	OPTIONS
		FEDERAL TRANSIT ADMINISTRATION (FTA) **Section 5307 Urbanized Area** Formula-based grants program for transit capital and operating assistance to urbanized areas **Section 5309 Fixed Guideway Modernization** Capital funds for existing fixed guideway systems that have been operating for over seven years **Section 5309 Bus and Bus-Related** Project-specific capital grants for the purchase of vehicles and other bus-related assets **Section 5309 New Starts** Multi-year competitive basis funds for major new transit capacity projects **Transportation Investment Generating Economic Recovery (TIGER)**
 STATE	The State of Florida Department of Transportation (FDOT)'s primary statutory responsibility is to coordinate the planning and development of a safe, viable, and balanced transportation system within the state of Florida. Serving all regions of the state, FDOT assures the compatibility of all transportation components, including multimodal facilities.	**FIHS Construction and Right-of-Way** Determined by FDOT for public transportation, intermodal access, and seaport development projects **Intermodal Access** Assistance for improving access to intermodal facilities and the acquiring of associated rights of way **Strategic Intermodal System** 2003 Florida Legislature enacted Sections 339.61-64 that determines SIS hubs and roadways that move both people and goods **Quality of Life** Primary purpose is to fund improvements on the part of the State Highway System (SHS) that are not designated as FIHS (approximately 68% of the SHS) **Transit** Capital and operating assistance to transit, paratransit, and ridesharing systems **Fuel Taxes and Road Impact Fees** • Constitutional Gas Tax (Secondary Gas Tax) Miami-Dade County Public Works Department (80%) and General Fund (20%)

SOURCE	GENERAL DESCRIPTION	OPTIONS
		• Local Option Six-Cents Gas Tax (6-Cent LOGT) Miami-Dade County Public Works Department and MDT • Capital Improvement Local Option Gas Tax (5-Cent LOGT) Miami-Dade County Public Works Department • Ninth-Cent Gas Tax (Voted Gas Tax) Miami-Dade County Public Works Department and MDT • Road Impact Fees at a district level against new developments **MDT** People's Transportation Plan (PTP) half-cent dedicated sales tax (Charter County Transit Surtax) **Federal Highway Priority Projects (FHPP)** **Transportation Enhancement Program (TEP) Grant** **FDOT Safety Office's Highway Safety Grant Program** **FDEP'S Office of Greenways and Trails (OGT)** **FDOT Service Development Program (SDP)**
 COUNTY	The Federal Aid Highway Act of 1962 mandated that as a condition for the receipt of federal funds, each urban area with a population over 50,000 in the United States was required to carry on a continuing, cooperative, and comprehensive transportation planning process. The Metropolitan Planning Organization (MPO) for the Miami Urbanized Area guides the transportation planning process in Miami -Dade County. The MPO was created as required under Section 163.01, Chapter 163, Florida Statutes, and established by Interlocal Agreement between Miami-Dade County and the Florida Department of Transportation (FDOT). A primary function for the MPOs is to produce and update (every 5 years) a Long Range Transportation Plan (LRTP) with a minimum time horizon of 20 years. The LRTP is a comprehensive transportation infrastructure plan that includes, at a minimum, highway and transit infrastructure improvements. Certain projects included in the City's Project Bank are concurrent with the 2040 LRTP. Depending on the priority given in the LRTP, certain funds may be allocated, planned, or pending to be planned. For any of the projects recommended by this TMP to be eligible for this type of funding, they must be included and prioritized as part of the LRTP effort. Moving forward, the City must ensure that a plan is developed to introduce the TMP recommended projects into the LRTP during its next amendment's cycle.	Refer to ***Figure 120*** for the latest Revenue Forecast presented in the 2040 Edition of Miami-Dade County LRTP. Of the $41 billion in total projected revenues identified in the table, approximately 70 percent is generated locally. This amount includes transit fares, PTP surtax revenues, County general funds, fuel taxes (both the local option taxes and the County's share of the state taxes), road impact fees, MDX revenues, and the County's estimated share of Turnpike revenues. The remaining 30 percent of the total comes from either federal or state funding sources, including FDOT programs and FTA and FHWA grant programs.

SOURCE	GENERAL DESCRIPTION	OPTIONS
LOCAL	The City's Transportation Department ensures that the Beach has a safe, secure, and efficient transportation system that moves people and goods. While ensuring environmental and economic sustainability, the department promotes alternative modes of travel to improve the mobility, livability, accessibility, and quality of life for all residents, tourist, and commuters that travel within Miami Beach.	**Quality of Life Taxes** Funds available for tourism enhancing projects with capital projects in north, south and mid beach of approximately $5.5 million per year **People's Transportation Plan Fund** Half-cent county surtax dedicated to transportation of which the City receives $3.4 Million per year for transit and transportation improvements. **Concurrency Mitigation Fees** Fees paid to mitigate the traffic impacts specific to a project approximately $1.4 million per year in the last 3 years **Fees in Lieu of Parking** • A recurring or one-time fund that is subsidized by developers that pay a $40,000 fee (or $800 annuity) for each parking space they are not able to provide within their project • The funds collected are used for transportation and mobility related improvement projects Citywide; approximately $12.5 million accumulated **Parking Year End Surplus** Year-end surplus from the parking fund that can be used to fund any legal purpose of the City, including transportation initiatives and is allocated $1.3 million for transportation in the FY 2014/15
OTHER	There are a variety of other funding options available to the City to provide for transportation improvements. For example private funding may be one and could include cost sharing, private ownership, and tax increment financing. Many communities provide a major portion of their transportation system through improvements provided by private developers and/or through impact fees.	**Public Private Partnership** Method of financing a roadway project where a private entity constructs and maintains a facility and the City pays for the use of the facility for the traveling public. This is accomplished by the City paying the private entity access fees or through a lease agreement. **Tax Increment Financing** The concept is that as improvements are made within the defined area and property values increase, the resulting property tax revenue would be earmarked for a specific use within the area, such as transportation improvements. **Strategic Parking Pricing (Recurring)** Parking management system responsive to fluctuations in parking demand and compatible with existing parking technologies. • Since 2011 Seattle has the Performance-Based Parking

SOURCE	GENERAL DESCRIPTION	OPTIONS
		Pricing Program which regulates neighborhood parking rates, hours, and time limits by measures of occupancy and is evaluated and corrected annually • City of Denver, developed to accommodate current growth in travel patterns and mode split • MB Commission approved implementation of a Pilot strategic Parking Program on 2014 **Congestion Pricing (Recurring)** Surcharging users of public roadways to reduce congestion by burdening motorists and favoring multimodal facilities and/or transit through reinvestments of funds collected. • Locally, I-95 Express Lanes are an example of Congestion Pricing • Vancouver's citizens will soon vote for/against implementation of a mobility pricing system • San Francisco is currently implementing a trial system on Treasure Island in which residents will be given: o mandatory transit passes o alternative modes of transportation will be favored o motorists will have to pay parking fees and ramp metering

Table 5-1 | Revenue Forecast FY 2020-FY 2040 Estimates for Miami-Dade County (Millions YOE $)

	Priority I 2020	Priority II 2021-2025	Priority III 2026-2030	Priority IV 2031-2040	Total 2020-2040
Capital Revenues					
SIS Highways Construction & ROW	$205	$374	$2,372	$3,592	$6,543
Other Arterial Construction & ROW	$96	$429	$405	$887	$1,817
Transit	$47	$241	$253	$531	$1,072
TMA Funds	$34	$168	$168	$336	$705
Districtwide TALT Funds	$3	$16	$16	$32	$68
Transportation Alternatives (TALU)	$3	$17	$17	$33	$69
Transportation Regional Incentive Program (TRIP)	<$1	$6	$6	$13	$25
FTE**	$0	$42	$413	$1,930	$2,385
MDX**	$44	$240	$401	$1,269	$1,954
PWWM					
Constitutional Gas Tax*	$15	$77	$79	$164	$335
Road Impact Fees	$43	$231	$243	$521	$1,038
MDT					
PTP Surtax (debt service for capital)	$160	$890	$1,024	$2,861	$4,935
5-cent CI-LOGT	$18	$91	$94	$195	$398
Operating Revenue					
PWWM					
6-cent LOGT	$42	$211	$216	$449	$918
County Gas Tax	$8	$42	$43	$89	$182
9th Cent Gas Tax	$11	$54	$55	$114	$234
MDT					
Direct Operating Revenues	$145	$828	$961	$2,449	$4,383
Federal/State Grants (excl. FDOT Transit above)	$57	$320	$372	$949	$1,698
PTP Surtax (for operations)	$92	$577	$801	$2,233	$,3703
All Other Existing (incl GF and LOGT)	$276	$1,565	$1,861	$4,846	$8,548
Total	**$1,297**	**$6,419**	**$9,800**	**$23,492**	**$41,008**

* Department of Public Works and Waste Management (PWWM) receives 80% of projected - Constitutional Gas Tax (Secondary Gas Tax), 20% of this tax is allocated to the County General Fund.
**Net Revenues are shown for FTE and MDX.
Note: Totals may not add due to rounding.

Figure 120: Revenue Forecast FY 2020 – FY 2040 Estimates for Miami-Dade County

Table 5-2 | 2040 Set-Aside Funds (Millions YOE $)

	Priority I 2020	Priority II 2021-2025	Priority III 2026-2030	Priority IV 2031-2040	Total 2020-2040
Bicycle/Pedestrian	$5	$24	$24	$47	$99
Congestion Management	$9	$46	$45	$70	$171
Freight	$6	$30	$29	$62	$127
Total Set-Asides	**$20**	**$100**	**$98**	**$179**	**$397**

Note: Totals may not add due to rounding.

Figure 121: 2040 LRTP Set-Aside Funds

Table 5-4 | Available Revenue for New Capital and New O&M (Millions YOE $)

	Priority I 2020	Priority II 2021-2025	Priority III 2026 -2030	Priority IV 2031-2040	Total 2020-2040
Revenues for New Capital and New O&M					
Other Arterial Construction & ROW	$86	$386	$364	$798	$1,635
Transit	$0	$71	$152	$367	$590
TMA Funds	$30	$149	$149	$299	$627
FTE	$0	$42	$413	$1,930	$2,385
MDX	$44	$240	$401	$1,269	$1,954
PWWM	$59	$282	$247	$382	$970
Subtotal for New Capital and New O&M	$219	$1,170	$1,727	$5,045	$8,161
SIS Highway Construction & ROW	$205	$374	$2,372	$3,592	$6,543
Transportation Alternatives (TALU)	$1	$3	$3	$7	$13
Districtwide Transportation Alternatives (TALT)	$3	$16	$16	$32	$68
TRIP	$0	$6	$6	$12	$24
Set-Asides (Bicycle/Pedestrian, CMP, Freight)	$20	$100	$98	$179	$397
Total Available Funds	**$448**	**$1,669**	**$4,222**	**$8,867**	**$15,206**

Note: Totals may not add due to rounding.

Figure 122: 2040 LRTP Available Revenue for New Capital and New O&M

There are plenty of transportation funding sources available for the City to utilize toward improving its infrastructure. Given that some of these recommended projects are to take place on facilities for which the City has limited jurisdiction (i.e. state and county roadways); the City must diligently match the applicable source to the type of project. The City should also review its currently planned projects as well as those that have already been completed to identify the amount available to fund future needs. As it is, the City may have a backlog of projects that are already part of their Capital Improvements Program (CIP) which should be addressed prior to any newly recommended project. The City shall continue to review its CIP on an annual basis to ensure it is meeting its goals and objectives and to review its funding needs.

MOVINGFORWARD

10. NEXT STEPS

To provide “real” and effective solutions, many of the recommendations of this plan will require more detailed analysis and/or consultation. Given limited resources and practical constraints, achieving all of the goals set forth in this document requires the City to prioritize its efforts and explore innovative funding and design solutions.

THIS TRANSPORTATION MASTER PLAN ENCOURAGES THE CITY OF MIAMI BEACH TO:

Obtain Biggest Bank for Its Bucks

Prioritize investments where the greatest benefits can be achieved. Start with locate problem areas such as collision “hotspots,” and where improvements achieve larger network benefits such as gaps in the transit, walking, or bicycle network.

Think Big Picture

Prioritize projects that accomplish multiple transportation benefits, like improved mobility and safety, but that also enhance the City’s quality of life and economic competitiveness, such as those that benefit air quality and increase commercial activity.

Be Proactive and Opportunistic

Minimize throwaway efforts by coordinating transportation improvements with other work projects. When and where feasible, time projects to take place during concurrent reconstruction projects, infrastructure replacement, community plans, and new development.

Innovate

Use low-cost pilot projects to test new ideas and approaches. Seek new transportation and information technologies that help achieve efficiency.

Keep Track

Monitor results, learn from experiences, and adapt policies and approaches as necessary. If and when possible, share and gather data in an open format that supports other efforts and enhances the planning and development process.

Be a Team Player

Collaborate with partners on projects that span municipal boundaries and provide regional benefits. Pursue partnerships for development and funding opportunities, including other government agencies, academic institutions, community and business groups, and private industry.

Engage the Community

Involve residents, businesses, and other stakeholders when developing and implementing projects. Their feedback is crucial to advance any improvement project, and their concerns and aspirations will foster constructive discussion and inspire creative and positive action.

FINAL REFLECTION

On behalf of the many contributors to this Transportation Master Plan, The City of Miami Beach thanks you for reading this document. In April 2016, the final plan was adopted by the City of Miami Beach.

To all residents and visitors, your continued involvement in and advocacy for this TMP will be absolutely essential to implementing the recommendations put forth. It is the City's hope that all who read it will recognize many principles that they are inspired to rally behind. Now is the time for all of us, who have come to know and love this part of Florida, to emphasize our common interests and look beyond our short-term concerns to strive toward true multi-modal vision. **A VISION WHICH PLACES THE PEDESTRIAN, THE BICYCLIST, AND THE TRANSIT RIDER AT THE FOREGROUND OF ALL FUTURE TRANSPORTATION DECISION MAKING.** As well as taking advantage of all opportunities to manage and improve congestions on our streets

Whether you are a private citizen, local official, planner, business person, educator, or part of any other stakeholder group, we hope you see your issues addressed thoughtfully in the plan. Whether you have participated to date or are participating for the first time by reading the plan, we hope you continue to take advantage of opportunities presented by this master plan to weigh in on issues that matter to you and your community. The city and region's future depends on your active engagement.